Hence, either statements I and III together are sufficient or statements II and III together are sufficient.

10. Answer: B)

From option (a):

Volume of cone = 2772 = (1/3) x (22/7) x (radius of cone)^2 x height of cone

Area of circle = 154 = (22/7) x (radius of circle)^2

Radius of circle = 7 m

Radius of cylinder = 3*Radius of circle = 21 m

Height of cylinder = height of cone

Radius of cone is not given. So, height of cylinder cannot be determined.

Hence, this option is not sufficient alone to find the answer.

From option (b):

Area of rectangle = 168 = length x breadth

Radius of cylinder = (4/3) x length

Height = 18 m

Volume of cylinder = 2772 = (22/7) x (radius of cylinder)^2 x 18

Radius of cylinder = 7 m

Difference = 18 - 7 = 11 m

From option (c):

Volume of cylinder = volume of cone = (1/3) x (22/7) x 15 x 15 x 35 = 8250 cubic meters

8250 = (22/7) x (radius of cylinder)^2 x height of cylinder

Radius of cylinder = radius of circle

Area of circle = area of rectangle = length x breadth = (4/3) x (breadth)^2

Since, breadth is not given. So, radius and height of cylinder cannot be determined.

Hence, this option is not sufficient alone to find the answer.

From option (d):

Area of cylinder = 3 x area of sphere = 3 x 4 x (22/7) x 7 x 7 = 1848 sq.m

1848 = 2 x (22/7) x radius of cylinder x height of cylinder

Area of cone = 308 sq.m = (22/7) x radius of cone x slant height of cone

Given data is not sufficient to determine the answer.

Hence, this option is not sufficient alone to find the answer.

11. Answer: C)

Respective ratio of age of P after 6 years and twice of ages of R before 3 years are in the ratio 5: 6 respectively. Then,

(P + 6): 2(R - 3) = 5: 6

R = (3P + 33)/5

T is 12 years younger than S. Then,

S = 12 + T

The age of Q after 8 years and age of U before 4 years are in the ratio 3: 1 respectively. Then,

(Q + 8): (U - 4) = 3: 1

U = (Q + 20)/3

From option (1): Present ages of P, T and S are in the ratio 2: 2: 3 respectively and the ratio of age of S before 6 years and the ratio of age of U after 4 years is 3: 2 respectively.

P: T: S = 2: 2: 3

Means, P = T

And, (S - 6): (U + 4) = 3: 2

S = (3U + 24)/2

Now, S = 12 + T = 3T/2

T = P = 24 years

S = 12 + 24 = 36

Then, U = (2 x 36 - 24)/3 = 16 years

And, Q = 3 x 16 - 20 = 28 years

Therefore, difference between ages of P and Q = 28 - 24 = 4 years

Hence, this option alone is sufficient to find the answer.

From option (2): Average of present ages of P, R and T is 23 years and the ratio of ages of Q and U before 4 years was in the ratio 2: 1 respectively. Difference between ages of S and U is 20 years.

P + R + T = 3 x 23 = 69

And, (Q - 4): (U - 4) = 2: 1

U = (Q + 4)/2 = (Q + 20)/3

Q = 28 years

U = (28 + 4)/2 = 16 years

Then, **Case 1: S - U = 20**

S = 20 + 16 = 36 years

Case 2: U - S = 20

S = 16 - 20 = - 4 years (which is not possible)

So, from case 1., we have

S = 36 years, then, T = 36 - 12 = 24 years

Now, P + ((3P + 33)/5) + 24 = 69

P = 24 years

Therefore, difference between ages of P and Q = 28 - 24 = 4 years

Hence, this option alone is sufficient to find the answer.

From option (3): Average of present ages of P, U and S is 25(1/3) years and the difference between ages of T and U is 8 years.

P + U + S = 3 x 76/3 = 76

Case 1: T = U + 8

S = U + 8 + 12 = U + 20

P + U + U + 20 = 76

U = (56 - P)/2

Then, U = (56 - P)/2 = (Q + 20)/3

2Q + 3P = 128

Case 2: T = U - 8

S = U - 8 + 12 = U + 4

P + U + U + 4 = 76

U = (72 - P)/2

Then, U = (72 - P)/2 = (Q + 20)/3

2Q + 3P = 104

From the given data, we cannot determine the difference between ages of P and Q.

Hence, this option alone is not sufficient to find the answer.

From option (4): Present ages of T and U are in the ratio 3: 2 respectively and the difference between ages of P and R who is 15 years younger than S is 3 years.

T: U = 3: 2

Case 1: R = P + 3

R = (3P + 33)/5 = P + 3

P = -99/4 years (which is not possible)

So, this case is invalid.

Case 2: R = P - 3

R = (3P + 33)/5 = P - 3

P = 24 years

Now, R = 24 - 3 = 21 years

Then, S = 21 + 15 = 36 years

And, T = 36 - 12 = 24 years

Now, U = 24 x 2/3 = 16 years

And, 16 = (Q + 20)/3

Q = 28 years

Therefore, difference between ages of P and Q = 28 - 24 = 4 years

Hence, this option alone is sufficient to find the answer.

From option (5): Sum of ages of P and Q is 52 years and present age of R is 5 years more than the present age of U.

P + Q = 52

R - U = 5

(3P + 33)/5 - (Q + 20)/3 = 5

P = (76 + 5Q)/9 = 52 - Q

Q = 28 years

Then, P = 52 - 28 = 24 years

Therefore, difference between ages of P and Q = 28 - 24 = 4 years

Hence, this option alone is sufficient to find the answer.

12. Answer: C)

Yellow = 4

Let,

Red = m

Blue = n

Orange = p

Total = 21

4 + m + n + p = 21

=> m + n + p = 21 - 4

=> m + n + p = 17 ---------- (i)

From I and II:

$({}^{m}c_1 \times {}^{p}c_1)/{}^{21}c_2 = 8/35$

=> (m x p)/210 = 8/35

=> m x p = 210 x 8/35

=> m x p = 48 ---------- (ii)

And

n/21 = 1/7

=> n = 21/7

=> n = 3

From (i)

m + 3 + p = 17

=> m + p = 17 - 3

=> m + p = 14

=> m = 14 - p

From (ii)

(14 - p) x p = 48

=> $14p - p^2 = 48$

=> $p^2 - 14p + 48 = 0$

=> $p^2 - 8p - 6p + 48 = 0$

=> p(p - 8) - 6(p - 8) = 0

=> (p - 6)(p - 8) = 0

=> p = 6,8

For p = 6

m = 14 - 6 = 8

For p = 8

m = 14 - 8 = 6

Required probability = $({}^4c_2 + {}^6c_2 + {}^8c_2 + {}^3c_2)/{}^{21}c_2$

= (6 + 15 + 28 + 3)/210

= 52/210

= 26/105

From I and III:

$({}^mc_1 \times {}^pc_1)/{}^{21}c_2 = 8/35$

=> (m x p)/210 = 8/35

=> m x p = 210 x 8/35

=> m x p = 48 ---------- (ii)

And

m/21 = 2/7

=> m = 21 x 2/7

=> m = 6

From (ii)

6 x p = 48

=> p = 8

From (i)

6 + n + 8 = 17

=> n = 17 - 14

=> n = 3

Required probability = $({}^4c_2 + {}^6c_2 + {}^8c_2 + {}^3c_2)/{}^{21}c_2$

= (6 + 15 + 28 + 3)/210

= 52/210

= 26/105

From II and III:

n/21 = 1/7

=> n = 21/7

=> n = 3

m/21 = 2/7

=> m = 21 x 2/7

=> m = 6

From (i)

6 + 3 + p = 17

=> p = 17 - 9

=> p = 8

Required probability = $({}^4c_2 + {}^6c_2 + {}^8c_2 + {}^3c_2)/{}^{21}c_2$

= (6 + 15 + 28 + 3)/210

= 52/210

= 26/105

Hence, any two of the three together are sufficient.

13. Answer: E)

(1/P) + (1/Q) + (1/R) = 1/18

From statement A:

P = 5 + 1/((1/Q) + (1/R))

P = 5 + 1/((1/18) - 1/P)

P = 2.33, 38.67

Here, work done by Q alone cannot be determined and so, the answer cannot be determined.

Hence, this statement alone is not sufficient.

From statement B:

(1/P) + (1/R) = (1/20) x 1/2 = 1/40

Then, (1/P) + (1/Q) + (1/R) = 1/18

(1/Q) = (1/18) - (1/40)

Q = 360/11

Now, one day work of Q alone = 11/360

Remaining work = 1 - 11/360 = 349/360

Then, time taken by P, Q and R to complete the remaining work

= 18 * (349/360)

= 17.45 days

Therefore, total time taken = 1 + 17.45 = 18.45 days

Hence, this option alone is sufficient.

From statement C:

Q = 50 days

Then, one day work of Q alone = 1/50

Remaining work = 1 - 1/50 = 49/50

Now, time taken by P, Q and R to complete the remaining work

= 18 * (49/50)

= 17.64 days

Therefore, total time taken = 1 + 17.64 = 18.64 days

Hence, this option alone is sufficient.

From statement D:

(1/Q) + (1/R) = 1/27

Then, (1/P) = (1/18) - (1/27)

P = 54 days

Here, work done by Q alone cannot be determined and so, the answer cannot be determined.

Hence, this statement alone is not sufficient.

14. Answer: C)

Let speed of boat C in still water = c km/hr

Then, speed of boat A in still water = c + 4

And, speed of boat B in still water = c + 3

Let stream speed = s km/hr

11: 10 = (c + 3 + s): (c + s)

c = 30 - s

From 1: Stream is flowing with speed 9 km/hr.

s = 9 km/hr

c = 30 - 9 = 21 km/hr

Upstream speed of boat C = c - s = 21 - 9 = 12 km/hr

Therefore, upstream distance covered by boat C in 6.5 hours = 12 * 6.5 = 78 km

Hence, this statement alone is sufficient.

From 2: Difference between upstream speed of boat A and C is 4 km/hr.

(c + 4 - s) - (c - s) = 4

From the given data, we cannot determine the value of c and s.

Hence, this option alone is not sufficient to find the answer.

From 3: Ratio of upstream speeds of boat A and C is 4: 3 respectively.

4: 3 = (c + 4 - s): (c - s)

s = c - 12 = 30 - c

c = 21 km/hr

Upstream speed of boat C = c - s = 21 - 9 = 12 km/hr

Therefore, upstream distance covered by boat C in 6.5 hours = 12 * 6.5 = 78 km

Hence, this statement alone is sufficient.

From 4: Boat C covers 105 km downstream in 3.5 hours.

c + s = 105/3.5 = 30

c = 30 - s

From the given data, we cannot determine the value of c and s.

Hence, this option alone is not sufficient to find the answer.

15. Answer: E)

From I:

Interest amount from scheme A after 2 years = [(x + y) * 20 * 2]/100 = 0.4(x + y)

Interest amount from scheme B after 2 years = (y - x) * $[(1.4)^2 - 1]$ = 0.96(y - x)

According to the question:

0.96(y - x) = 48% of 0.4(x + y)

5(y - x) = (x + y)

3x = 2y

y = 1.5x

Required ratio = (x + y): (y - x) = 2.5x: 0.5x = 5: 1

Statement I alone is sufficient.

From II:

According to the question:

(x + y) + (y - x) = 24000

y = 12000

Amount of interest received from scheme A at the end of 3 years = [(x + y) * 20 * 3]/100 = 12000

(x + y) = 20000

x = 8000

Required ratio = (x + y): (y - x) = 20000: 4000 = 5: 1

Statement II alone is sufficient.

From III:

According to the question:

$(x + y) - (y - x) = 16000$

$2x = 16000$

$x = 8000$

Interest amount from scheme B after 3 years = $(y - x) * [(1.4)^3 - 1] = 6976$

$1.744(y - x) = 6976$

$(y - x) = 4000$

$y = 12000$

Required ratio = $(x + y): (y - x) = 20000: 4000 = 5: 1$

Statement III alone is sufficient.

16. Answer: E)

Let investment of Shreya = p

Investment of Kavita = 3000 - p

Time = a/10 years

Rate = a%

For Kavita:

$CI = (3000 - p) \times ((1 + (a/100))^{(a/10)} - 1)$

For Shreya:

$CI = (p/2) \times ((1 + (a/100))^{(a/10)} - 1)$

$SI = (p/2) \times a \times (a/10)/100 = a^2p/2000$

Statement I:

Let the time be 't' years.

Investment of Shreya = p = (2/3) x 3000 = 2000

Investment of Kavita = 3000 - p = 3000 - 2000 = 1000

For Kavita:

$CI = 1000 \times ((1 + (a/100))^{(t)} - 1)$

For Shreya:

$CI = 1000 \times ((1 + (a/100))^{(t)} - 1)$

$SI = 1000 \times a \times (t)/100 = 10at$

Total sum received by them together after given 't' years = Rs.4280

$4280 - 3000 = 1000 \times ((1 + (a/100))^{(t)} - 1) + 1000 \times ((1 + (a/100))^{(t)} - 1) + 10at$

From the above equation, Value of 'a' can't be determined as there are 2 variables and one equation.

Statement II:

For Shreya:

CI - SI = 40

$CI = (p/2) \times ((1 + (a/100))^{(a/10)} - 1)$

$SI = (p/2) \times a \times (a/10)/100$

$40 = (p/2) [((1 + (a/100))^{(a/10)} - 1) - (a^2/1000)]$

Value of 'a' cannot be determined by the above equation.

Statement III:

For Shreya:

Let the time be 'n' years.

SI+CI = 2500

$CI = (p/2) \times ((1 + (a/100))^n - 1)$

SI = (p/2) x a x n/100

2500 = (p/2) x a x n/100 + (p/2) x ((1 + (a/100))^{n} - 1)

So, Value of 'a' can't be determined by the above equation.

On combining I, II and III:

There are three equations with four unknown variables. So the value of a can't be determined.

17. Answer: E)

Let investment of Shreya = p

Investment of Kavita = 3000 - p

Time = a/10 years

Rate = a%

For Kavita:

CI = (3000 - p) x ((1 + (a/100))$^{(a/10)}$ - 1)

For Shreya:

CI = (p/2) x ((1 + (a/100))$^{(a/10)}$ - 1)

SI = (p/2) x a x (a/10)/100 = a^2p/2000

Statement I:

$3a^2$ - 55a - 100 = 0

$3a^2$ - 60a + 5a - 100 = 0

a = 20, -1.67

For Shreya:

CI = (p/2) x ((1 + (a/100))$^{(a/10)}$ - 1)

CI = (p/2) x ((1 + (20/100))$^{(20/10)}$ - 1) = 11p/50

SI = a^2p/2000 = 20 x 20 x p/2000 = p/5

Statement II:

p - 3000 + p = 1000

p = 2000

Statement III:

4280 = (3000 - p) x ((1 + (a/100))$^{(a/10)}$ - 1) + (p/2) x ((1 + (a/100))$^{(a/10)}$ - 1) + a^2p/2000

From statements I and II:

p = 2000

SI = p/5 = 2000/5 = Rs.400

CI = 11p/50 = 11 x 2000/50 = Rs.440

Total amount received by Shreya after (a /10) years = 2000 + 400 + 440 = Rs.2840

From statements II and III:

p = 2000

4280 = (3000 - 2000) x ((1 + (a/100))$^{(a/10)}$ - 1) + (2000/2) x ((1 + (a/100))$^{(a/10)}$ - 1) + a^2 x 2000/2000

4280 = 2000 x ((1 + (a/100))$^{(a/10)}$ - 1) + a^2

Value of 'a' cannot be determined.

hence, statements II and III together are not sufficient.

From I and III:

a = 20

For Kavita:

CI = (3000 - p) x ((1 + (20/100))$^{(20/10)}$ - 1) = (3000 - p) x 11/25

For Shreya:

CI = 11p/50

SI = p/5

4280 = (3000 - p) x (11/25) + (11p/50) + (p/5)

p = Rs.2000

For Shreya:

SI = p/5 = 2000/5 = Rs.400

CI = 11p/50 = 11 x 2000/50 = Rs.440

Total amount received by Shreya after (a /10) years = 2000 + 400 + 440 = Rs.2840

Hence, either statement II or III and statement I together are sufficient.

18. Answer: C)

From I:

Let the time taken by person P alone = 12x

Time taken by person Q alone = 125% of 12x = 15x

Time taken by person R alone = 83(1/3)% of 12x = 10x

According to the question-

Time taken by persons P and Q together to do the work = 1/[(1/12x) + (1/15x)] = 60x/9

Time taken by persons Q and R together to do the work = 1/[(1/15x) + (1/10x)] = 6x

(60x/9) - 6x = (2/3)

2x/3 = 2/3

x = 1

Time taken by person P alone to do the work = 12x = 12 days

Statement I alone is sufficient.

From II:

Let time taken by persons P and R alone to fill the tank is (x + 2) and 'x' respectively.

According to question-

[1/(x + 2)] + (1/x) = (11/60)

$60(2x + 2) = 11(x^2 + 2x)$

$11x^2 - 98x - 120 = 0$

(x - 10)(11x + 12) = 0

x = 10

Time taken by person P alone to do the work = (x + 2) = 12 days

Statement II alone is sufficient.

From III:

Time taken by person P alone to do the work = 1/[(1/4) - (1/6)]

= 1/[1/12]

= 12 days

Statement III alone is sufficient.

19. Answer: B)

From I:

We cannot determine any of the quantity of either oil or water in either of the mixture.

From II:

Since we don't know about the profit and also we cannot determine any of the quantity of either oil or water in either of the mixture, so II alone is not sufficient to answer the question.

From III:

Let amount of mixture A and B is 5x and 11x respectively.

Amount of oil in mixture A = 3x

Amount of water in mixture A = 2x

Amount of oil in mixture B = 4x

Amount of water in mixture B = 7x

According to question-

(7x + 2x) - (3x + 4x) = 20

2x = 20

x = 10

Difference between quantity of mixture in both the containers = 11x - 5x = 6x = 60 litres

Statements III alone is sufficient.

From I and II:

Per litre cost price of mixture C = 22.5 * (100/120) = Rs.18.75

Ratio of oil to water in mixture C:

30 10

18.75

= (18.75 – 10): (30 – 18.75)

= 8.75: 11.25

= 7: 9

Ratio in which mixture A and B are mixed-

Let amount of oil and water in final mixture is 7x and 9x respectively.

According to question-

22.5(7x + 9x) - (7x * 30 + 9x * 10) = 600

x = 10

Ratio in which mixture A and B are mixed:

(3/5) (4/11)

(7/16)

= [(4/11) – (7/16)]: [(7/16) – (3/5)]

= 5: 11

Required difference = 160 * [(11 - 5)/(11 + 5]) = 60 litres

Statements I and II together are sufficient.

20. Answer: E)

Let, initial amounts invested by Ashok, Manoj and Harsh be Rs.5k, Rs.9k and Rs.13k respectively.

Ratio of shares in the profit:

Ashok : Manoj : Harsh = (5k + 10k x 2) : (9k x 2 + 9k + 5000) : (13k x 3)

= 25k : (27k + 5000) : 39k

From I and II:

Ashok being the working partner, get 15% of the profit for his work.

At the end of three years, they earned a total profit of Rs.274000.

From I and III:

Ashok being the working partner, get 15% of the profit for his work.

25k/39k = 25/39

=> 25/39 = 25/39

From II and III:

At the end of three years, they earned a total profit of Rs.274000.

25k/39k = 25/39

=> 25/39 = 25/39

From I, II and III:

Ashok being the working partner, get 15% of the profit for his work.

At the end of three years, they earned a total profit of Rs.274000.

25k/39k = 25/39

=> 25/39 = 25/39

=> Share of Ashok in the profit cannot be find out.

Hence, cannot be determined even after combining all the statements.

21. Answer: C)

Statement I and III:

Let's take 7 kg of the mixture then according to statement III, two quantities will be 2 kg and 5 kg

Suppose CP of mixture is Rs. x per kg

∴ $2.1 \times 2 + 2.52 \times 5 = x \times 7$

From this x i.e. CP of mixture can be found

Statement I and II:

The sugar rate is given along with profit but as we don't know the ratio of quantities, we can't find the CP.

∴ Only Statement I and Statement III will be sufficient to answer the question.

22. Answer: C)

Statement I, II, III and IV together;

Since Vikas Paid Rs. 11000 (Statement II) and got 10% loss while selling (Statement III);

⇒ Amount of loss to Vikas = 1100

⇒ Since amount of profit gained by Rohan is equal to $10/11^{th}$ of the loss occurred to Vikas (Statement IV);

⇒ Amount of profit gained by Rohan = Rs. 1000

⇒ So cost price to Rohan = 11000 – 1000 = Rs. 10000

Since Rohan has bought from Shikar so selling price for shikhar is Rs. 10000.

Now we can find loss percentage to Shikhar as CP for his is Rs. 12000(Statement I).

∴ All the statements together are required to answer the question.

23. Answer: C)

From statement I:

Let Radhe's present age be 'A' years

Age of Radhe 8 years ago = A-8

Age of Radhe 10 years ago = A-10

As per the given statement,

(A-8) x (A-10) = 120

A^2 -10A -8A +80 =120

A^2 -18A -40 = 0

A^2 - 20A +2A -40 = 0

A(A-20) + 2(A-20) =0

A = 20 or A = -2

As age is always positive. So, A =20 years.

Age of Radhe is 20 years.

So, age of Radha = Radhe - 5 = 20 - 5 = 15 years.

Hence the data in statement I alone is sufficient to answer the question.

From statement II:

Let the present ages of Riya and Rima are 8A and 7A respectively.

As product of Riya's age 4 years ago (In years) and Rima's age 9 years ago (In years) is 60.

(8A -4) x (7A-9) =60

$56A^2$ - 72A -28A +36 =60

$56A^2$ - 100A - 24 = 0

$14A^2$ -25A -6 =0

$14A^2$ -28A +3A -6 = 0

A = 2 or A = - 3/14

As age is always positive, So A =2.

So, age of Radha = (16 +14)/2 = 15 years.

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

24. Answer: A)

From statement I:

Let the length of train be L m and the speed of train be S m/s.

Time taken by the train to cross a pole = (L/S)

Time taken by the train to cross a bridge of length 30 m

= (L +30)/S

Ratio of time taken by the train to cross a pole to the time taken by the train to cross a bridge of length 30 m

= (L/S)/ ((L +30)/S) = (9/10)

10L = 9L +270

L = 270 m.

So, data in statement I alone is sufficient to answer the question.

From statement II:

Let length of the given train be L m.

Let speed of the given train be S m/s.

Time taken by the given train to cross train A by moving in the same direction of train A

= (2L -140)/(S-S+10) = ((2L-140)/10)

Time taken by the given train to cross train A by moving in the opposite direction of train A

= (2L -140)/(S+S-10) = ((2L-140)/(2S-10))

The ratio of time taken by the given train to cross train A by moving in the same direction of train A to the time taken by the given train to cross train A by moving in the opposite direction of train A.

((2L-140)/10)/ (((2L-140)/(2S-10))) = ((2S-10)/10) = 2/1

2S - 10 = 20

S =15 m/s

But we don't have the exact time, so the answer cannot be determined.

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

25. Answer: E)

From statement I:

Number of days taken by Shiva and Kamlesh together to complete the task

= 6(8/12) = 6(2/3)

We have efficiencies of Nagesh and Umesh with respective to the efficiencies of Shiva and Kamlesh respectively, but we don't know the exact efficiencies of Shiva and Kamlesh. So data in statement I alone is not sufficient to answer the question.

From statement II:

Let Umesh takes N days to complete the task.

Number of days taken by Nagesh to complete the task

= N + (72/12) = (N +6).

Efficiency of Shiva is 25% more than the efficiency of Kamlesh.

But still data in statement II alone is not sufficient to answer the question.

By combining data from statements I and II together:

Let number of days taken by Shiva to complete the task alone be N

As efficiency of Shiva is 25% more than efficiency of Kamlesh. Kamlesh takes 25% more time than Shiva to complete the task alone.

Task done by Kamlesh and Shiva together in 1 day.

(1/N) + (1/(1.25N)) = (3/20)

(1/N) + ((4/5) x (1/N)) = 0.15

(1.8/N) = 0.15

N = 180/15 = 12

Number of days taken by Kamlesh to complete the task = 1.25 x 12 =15 days.

Efficiency of Umesh is 50% more than the efficiency of Kamlesh

Task done by Umesh in 1 day = 1.5 x (1/15) = (1/10)

Efficiency of Nagesh is 25% less than the efficiency of Shiva

Task done by Nagesh in 1 day = 0.75 x (1/12) = (1/16)

Task done by all the 4 persons in 1 day working together

= (1/10) + (1/12) + (1/15) + (1/16)

So, we can determine the answer by combining data from statements I and II.

26. Answer: C)

From statement I:

Let the initial volume of the pure milk in the solution be V litres.

Water in solution = (40-V) litres.

Milk removed after removing 4 litres of solution

= (V/40) x 4 = (V/10) litres.

Milk left in the solution = V- (V/10) = (0.9V)

Quantity of the milk in the solution after adding 9 litres of the milk

= 9 +0.9V

Milk removed after removing 5 litres of the milk

= ((9 + 0.9V)/45) x 5

= 1 +0.1V

Milk left in the solution = (9 + 0.9V) - (1 +0.1V)

= 8 +0.8V

Final quantity of the milk in the solution = 8 +0.8V +10

18 + 0.8V = 0.84 x 50 = 42

0.8V = 42-18 = 24

V = 30

So, initial volume of the pure milk in the solution was 30 litres. So, data in statement I alone is sufficient to answer the question.

From statement II:

Let initial volume of milk in the solution be V litres.

Quantity of milk left after replacing 4 litres of solution by water

= V x (1- (4/40))

= V x (9/10) = 0.9V

Quantity of milk left after replacing 5 litres of solution by water

= V x (1- (5/40))

= V x (7/8) = 0.875V

As per given,

0.9V - 0.875V = (750/1000) =0.75

0.025V = 0.75

V = 30 litres.

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

27. Answer: A)

From statement I:

Let the total amount with Nikita be P

60% of the amount invested at 12% per annum simple interest

Interest earned on 60% of the amount = 2 x 0.12 x 0.6P = 0.144P

Total interest earned on 40% of the amount

= $(0.4P \times (1 + (20/100))^2) - 0.4P$

= (0.4P) x ((36-25)/25)

= 0.176P

Total interest earned = 0.144P +0.176P = 0.32P

= 0.32P

Total interested earned on Rs. 10000 = 2 x (16/100) x 10000 = 3200

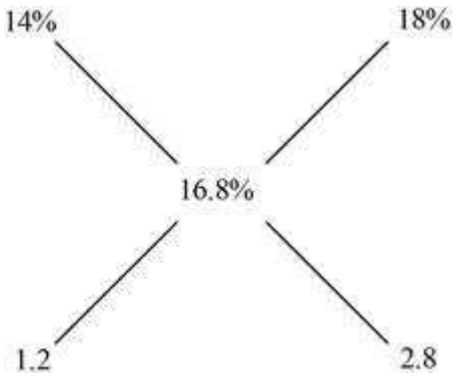
0.32P = 3200

P = Rs.10000.

Hence data in statement I alone is sufficient to answer the question.

From statement II:

According to Alligation rule,



Hence, we get (12/28) = 3: 7

We got ratio of the amount in different plans, but total amount invested cannot be determined.

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

28. Answer: C)

From I:

We have:

Let length of train P be Y meter

Length of bridge crossed by train P = 450 meter

Speed of train P = (Y + 450)/33.75

Let length of train Q be K meter

Let speed of train Q be S m/sec

Relative speed of train Q to P = ((Y + 450)/33.75 + S)

((Y + 450)/33.75 + S) = (Y + K)/12.5

Since, neither length of train P nor Q is known.

Hence, statement I alone is not sufficient.

From II:

We have:

Let length of train Q be K meter

Then, length of platform crossed by train Q = 3K/5

Speed of train Q must be same as it crosses platform and pole.

(K + 3K/5)/18 = K/11.25

8K/90 = K/11.25

Thus, by comparing we can't get speed of train Q.

Hence, statement II alone is not sufficient.

From III:

We have:

Let length of train Q be K meter

Length of platform crossed by train Q = 240 meter

Speed of train Q = (K + 240)/16.25

Length of train P = 360 meter

Let length of train P be D m/sec

Relative speed of train Q to P = ((K + 240)/16.25 - D)

((K + 240)/16.25 - D) = (K + 360)/37.5

Since, speed of train P is not known.

Hence, statement III alone is not sufficient.

From I and III:

We have:

Speed of train P = (Y + 450)/33.75

Length of train P = 360 meter

Speed = (360 + 450)/33.75 = 24 m/sec

Again,

Relative speed of train Q to P = ((K + 240)/16.25 - 24)

((K + 240)/16.25 - 24) = (K + 360)/37.5

(K - 150)/16.25 = (K + 360)/37.5

37.5K - 5625 = 16.25K + 5850

21.25K = 11475

K = 540 meter

Thus, speed of train Q = (540 + 240)/16.25 = 48 m/sec

Hence, statement I and III together are sufficient.

29. Answer: D)

Let the present age of Radha, Suresh, Mohan and Arpita be R, S, M and A respectively.

Using statement I:

R = S - 12 .. (1)

Using statement II:

A = M + 32 .. (2)

S + R = 24 .. (3)

Using statement III:

M = R + 8 .. (4)

Using all the three statements together:

Using equation (1) and (3), we get

S = 18 and R = 6

Put R = 6 in equation (4)

M = 6 + 8 = 14 years

Hence, we can see that the present age of Mohan is 14 years

30. Answer: C)

From II:

In statement II neither their amount of investment nor the ratio of their investment is given. Hence we can't determine the ratio of their profit at the end of the year.

Hence, statement II alone is not sufficient.

From I and II:

Let their investment be x, 3x and 5x respectively.

Ratio of their profit = (x * 4 + 2x * 8) : (3x * 4 + 1.5x * 8) : (5x * 4 + 2.5x * 8) = 20x:24x:40x = 5:6:10

Hence statements I and II together are sufficient.

From II and III:

After combining both statements II and III we are not given the amount of their investment. We are only given their profit at the end of the year.

Hence statements II and III together are not sufficient.

31. Answer: C)

From I – lets Mayank invested in scheme A is Rs. P

In scheme B = $P + P \times \frac{3}{8} = Rs.\frac{11P}{8}$

In scheme C = $P - P \times \frac{1}{4} = Rs.\frac{3P}{4}$

Ratio of sum invested in scheme A, B and C = 8 : 11 : 6

From II

Two year CI on 15% = $15 + 15 + \frac{15\times15}{100} = 32.25\%$

Two year CI on 10% = $10 + 10 \times \frac{10\times10}{100} = 21\%$

From I and II

$6P \times \frac{32.25}{100} - 8P \times \frac{21}{100} = 7.14$

$193.5P - 168P = 714$

$P = 28$

Mayank invested in scheme A = 28 × 8 = Rs. 224

From I and III

Two year CI on 10% = $10 + 10 + \frac{10 \times 10}{100} = 21\%$

Two year CI on 12% = $12 + 12 + \frac{12 \times 12}{100} = 25.44\%$

Two year CI on 15% = $15 + 15 + \frac{15 \times 15}{100} = 32.25\%$

ATQ

$8P \times \frac{21}{100} + 11P \times \frac{25.44}{100} + 6P \times \frac{32.25}{100} = 179.5752$

$168P + 193.5P + 279.84P = 17957.52$

$P = \frac{17957.52}{641.34}$

$P = 28$

Mayank invest in scheme A = 28 × 8 = Rs. 224

So, **I statement and either II and III are required to given answer.**

32. Answer: B)

Total Roses = 24

From I

Let red roses = x

So, $\frac{{}^{x}C_2}{{}^{24}C_2} = \frac{7}{69}$ = Probability

$\frac{x(x-1)}{2} = \frac{7}{69} \times \frac{24 \times 23}{2}$

$x^2 - x = 56$

$x^2 - x - 56 = 0$

$x = 8 - 7$

x = 8 = no. of red roses

From II

Left Pink roses = y

So $\Rightarrow \frac{{}^{y}C_2}{{}^{24}C_2} = \frac{15}{92}$

Similarly, y = 10

From (I) & (II)

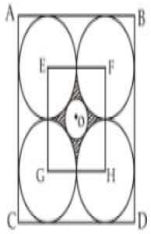
Yellow roses $\Rightarrow 24 - 10 - 8 = 6$

From III

we can't determine any relation

So, **only I and II statement required for given answer**

33. Answer: D)



By joining the centers of all four circles, a square is formed which contain 4 quadrant of circles which together makes a complete circle.

Area of shaded region = Area of square(EFGH) - Area of bigger circle – Area of smaller circle

Let radius of smaller circle and bigger circle be 'r' and 'R' respectively

Then relation between 'r' and 'R' is

$r = R(\sqrt{2} - 1)$

A → Radius of bigger circle is given

By this side of square, radius of smaller circle can be find out. So, area of shaded region can be find out

B → Diagonal of square is given

By this, side of square then radius of bigger circle and then radius of smaller circle can be find out

After that shaded region can be find out

C → by using this we can find out the radius of the both circles and side of square.

$\pi R^2 - \pi r^2 = given$

Relation between R and r is:-

$r = R(\sqrt{2} - 1)$

Hence, Any of A, B or C alone is sufficient to answer the question

34. Answer: B)

From A,

Given $r : h = 7 : 8$

From B

Radius of cone = $\frac{\text{Radius of hemisphere}}{2}$

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

$\frac{2}{3}\pi r^3 = 19404$

$r^3 = \frac{19404 \times 3 \times 7}{22 \times 2}$

$r^3 = 9261$

$r = 21$ cm

From A & B together —

Radius of cone = $\frac{21}{2}$ cm

Height of cone = $\frac{10.5}{7} \times 8 = 12$ cm

So from A and B we can determine the surface area of cone.

From A and C,

Given, radius of cone : height of cone = 7 : 8

Ratio between height and radius of cylinder = 8 : 7

$2\pi r (r + h) = 2640$ cm^3

$2\pi 7x (8x + 7x) = 2640$

$x = 2$ cm

Radius of cone = $7 \times 2 \times \frac{75}{100} = 10.5$ cm

Height of cone = $\frac{10.5}{7} \times 8 = 12$ cm

So, From A and B or from A and C, we can determine the surface area of cone.

35. Answer: D)

St. C — $\frac{\sqrt{3}}{4}a^2 = 16\sqrt{3}$, from here side of the equilateral triangle and height can be calculated.

St. B — Side of triangle = $\frac{48}{3\times2} = 8$

$h = \frac{\sqrt{3}}{2}a$

St. A — no conclusion

So using either B or C alone we can find the height.

36. Answer: D)

Statement I:

Let the age of Mitul = x years

Age of Rahul = x + 6 years

So, data in statement I alone is not sufficient to answer the question.

Statement II:

40% × Mitul = 30% × Rahul

Rahul: Mitul = 4:3

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

Statement III:

(Rahul × 1/2):(Mitul × 1/3) = 2:1

Rahul: Mitul = 4:3

So, data in statement III alone is not sufficient to answer the question.

Combining statements I and II:

According to question: (x + 6)/x = 4/3

4x = 3x + 18

x = 18

Age of Mitul = 18 years

Age of Rahul = 24 years

Required sum = 18 + 24 = 42 years

So, data in statements I and II together are necessary to answer the question.

Combining statements I and III:

According to question: $(x + 6)/x = 4/3$

$4x = 3x + 18$

$x = 18$

Age of Mitul = 18 years

Age of Rahul = 24 years

Required sum = 18 + 24 = 42 years

So, data in statements I and III together are necessary to answer the question.

37. Answer: E)

Let the 2 digit number be xy.

Statement I:

$x \times y = 21$

So it can be 7×3 or 3×7

So, data in statement I alone is not sufficient to answer the question.

Statement II:

$x - y = 4$ or $y - x = 4$

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

Statement III:

$x + y = 10$

So, data in statement III alone is not sufficient to answer the question.

Statement IV:

The number can be either $30 - 7 = 23$ or $30 + 7 = 37$

So, data in statement IV alone is not sufficient to answer the question.

38. Answer: D)

Let the radius and height of the cylindrical vessel be 'r' and 'h' metre, respectively.

Statement I:

$2\pi rh + 2\pi r^2 - 2\pi rh = 384$

$6r^2 = 384$

$r^2 = 64$

$r = 8$ m

Since, we don't know the height of the cylindrical vessel.

So, data in statement I alone is not sufficient to answer the question.

Statement II:

Quantity of water filled by the pipe = $72 \times 32 = 2304$ m^3

So, maximum capacity of vessel = $2304/0.8 = 2880$ m^3

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

Statement III:

Total surface area = $2\pi rh + 2\pi r^2 = 1104$ m^2

Curved surface area = $2\pi rh = 720$ m^2

$2\pi rh + 2\pi r^2 - 2\pi rh = 384$

$6r^2 = 384$

$r^2 = 64$

r = 8 m

So, 48h = 720

h = 15 m

So, maximum capacity of vessel = $\pi r^2 h = 3 \times 64 \times 15 = 2880\ m^3$

So, data in statement III alone is sufficient to answer the question.

Statement IV:

Curved surface area of vessel = 3600/5 = 720 m^2

Since, we don't know the height of the cylindrical vessel.

So, data in statement IV alone is not sufficient to answer the question.

39. Answer: B)

Statement I:

Let the downstream speed and upstream speed be 4x km/h and 3x km/h respectively.

And, let the distance between A and B be 'y' km.

y/3x - y/4x = 1

y = 12x ……..(i)

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

Statement II:

Since, boat starts at 7:00 a.m. and reaches at 11:00 a.m.

So, time taken by the boat to reach point B = 4 hours

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

Statement III:

Speed of stream = 2 km/h

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

Combining statement I and statement II:

Let the downstream speed and upstream speed be 4x km/h and 3x km/h respectively.

And, let the distance between A and B be 'y' km.

y/3x - y/4x = 1

y = 12x ……(i)

And, y/4x = 4 or y/3x = 4

y = 16x or y = 12x

So, y = 12x

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

Combining statement I and statement III:

Let the downstream speed and upstream speed be 4x km/h and 3x km/h respectively.

And, let the distance between A and B be 'y' km.

y/3x - y/4x = 1

y = 12x …….(i)

Speed of stream = (4x – 3x)/2 = 2

x = 4

Putting the value of 'x' in eq. (i), we get

y = 12 × 4 = 48 km

So, statement I and III together are necessary to answer the question.

Combining statement II and statement III:

Statement II and statement III together is not sufficient to answer the question.

40. Answer: C)

Investment of Rahul in two years = x + 1.25x = Rs. 2.25x

Investment of Vijay in two years = 3600 + (3600 – 1200) = Rs. 6000

So, ratio of profit share of Rahul: Vijay = 2.25x: 6000

Statement I:

2.25x/6000 = 9/5

11.25x = 54000

x = Rs. 4800

Since, profit is not given.

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

Statement II:

0.25x = 1200

x = Rs. 4800

Profit share of Rahul = 3 × 1200 = Rs. 3600

Ratio of profit share of Rahul:Vijay = (2.25 × 4800):6000

= 10800:6000 = 9:5

So, total profit earned after 2 years = (3600/9) × 14 = Rs. 5600

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

Statement III:

Profit earned by Vijay after 2 years = Rs. 2000

Since, we don't know the ratio of profit share of Rahul and Vijay.

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

Combining statement I and statement III:

Profit share of Vijay = Rs. 2000

Profit share of Rahul = 9/4 × 2000 = Rs. 3600

So, total profit earned after 2 years = 2000 + 3600 = Rs. 5600

So, statement I and statement III together are necessary to answer the question.

41. Answer: E)

Let, cost price of article P be Rs. x

Marked price of article P = Rs. 1.6x

Selling price of article P = 0.825 × 1.6x = Rs. 1.32x

So, 1.32x > 1580

x > 1580/1.32

x > 1196.96

42. Answer: A)

Statement I:

Let, speed of stream be 'x' km/h

If boat A is travelling in upstream and boat B is travelling in downstream then relative speed will be (30 – x + 40 + x) = 70 km/h

If boat A is travelling in downstream and boat B is travelling in upstream then relative speed will be (30 + x + 40 - x) = 70 km/h

So, time taken to meet each other = 2520/70 = 36 hours

So, data in statement I alone is sufficient to answer the question.

Statement II:

Let, upstream speed of boat A and boat B be 5x km/h and 7x km/h, respectively.

Relative speed = (5x + 7x + 2y) km/h

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

Statement III:

Since, downstream speed of boat A is less than that of boat B, so speed of boat A will be less than that of boat B in still water.

Let, speed of boat A and boat B in still water be 'x' km/h and 'x + 10' km/h, respectively.

Relative speed = x + x + 10 = '2x + 10' km/h

So, data in statement III alone is not sufficient to answer the question.

Statement IV:

IV. Upstream speed of boat A and downstream speed of boat B is 25 km/h and 45 km/h, respectively.

Relative speed = 25 + 45 = 70 km/h

So, time taken to meet each other = 2520/70 = 36 hours

So, data in statement IV alone is sufficient to answer the question.

43. Answer: D)

Let the total distance be 'p' km

Let the speed of 'A' and 'B' be x km/h and 'y' km/h respectively.

According to question,

p(1/x – 1/y) = 0.8

Statement I:

p(1/1.2x – 1/0.8y) = 0

Or, 3x = 2y

Or, y = 3x/2

So, data in statement I alone is not sufficient to answer the question.

Statement II:

Speed of C = 20 × 18/5 = 72 km/h

Total distance = 72 × 1.5 = 108 km/h

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

Statement III:

Let the time taken by 'A' to cover the distance 'p' with original speed be 't' hours

Therefore, when he decreases his speed by 20%, time taken by him = (t + 0.6) hours.

So, data in statement III alone is not sufficient to answer the question.

Combining statements, I and II:

108(1/x – 2/3x) = 0.8

Or, 3x = 1080/8

Or, x = 45 km/h

Therefore, time taken by 'A' = 108/45 = 2.4 hours

Time taken by 'B' = 2.4 – 0.8 = 1.6 hours

Speed of B = 108/1.6 = 67.5 km/h

So, data in statements I and II are sufficient to answer the question.

Combining statements II and III:

According to question: 108/0.8x – 108/x = 0.6

27/x = 0.6

x = 45

So, the speed of A = 45 km/h

Also, 108/45 – 108/y = 0.8

108/y = 1.6

y = 67.5

So, the speed of B = 67.5 km/h

So, data in statements II and III are sufficient to answer the question.

44. Answer: D)

Let the present ages of A, B, C and D be 6x years, 9x years, 7x years and 5x years, respectively.

Statement I:

According to question: 6x + 9x + 7x = 3 × (5x + 14)

7x = 42

x = 6

So, the present age of C = 7 × 6 = 42 years

So, data in statement I alone is sufficient to answer the question.

Statement II:

According to question:

6x + 7x + 14 = 9x + 5x + 8

x = 6

So, the present age of C = 7 × 6 = 42 years

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

Statement III:

According to question:

{(6x + 9x)/2 + 30}/{(7x + 5x)/2 + 24) = 5/4

(15x + 60)/(12x + 48) = 5/4

5(3x + 12)/4(3x + 12) = 5/4

5/4 = 5/4

1 = 1

Here, x is eliminated, so the age of C can't be determined.

So, data in statement III alone is not sufficient to answer the question.

45. Answer: A)

Statement I:

Let the additional investments of A, B and C are Rs. 2x, Rs. 3x and Rs. 2x respectively.

So the ratio of their profits = 1260 + 1260 + 2x:1620 + 1620 + 3x:900 + 900 + 2x

= 2520 + 2x:3240 + 3x:1800 + 2x

So the profit share of B = (3240 + 3x)/(7560 + 7x) × 10080 = 3(1080 + x)/7(1080 + x) × 10080 = 3/7 × 10080

= Rs. 4,320

So, data in statement I alone is sufficient to answer the question.

Statement II:

Let the initial investments of A, B and C are Rs. 7a, 9a and 5a, respectively.

So the ratio of their profits = (7a + 7a + x + 100):(9a + 9a + 2x – 100):(5a + 5a + x + 100)

= (14a + x + 100):(18a + 2x – 100):(10a + x + 100)

So the profit share of B = (18a + 2x – 100)/(42a + 4x + 100) × 10080

Here we can't find the profit share of B.

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

46. Answer: B)

Statement I:

Case I: Both trains are travelling in the same direction.

Speed of train A = 450/18 = 25 m/s

Let the speed of train B = x m/s

So according to question: (450 + 750)/(x – 25) = 30

x = 65

So, the speed of train B = 65 m/s

Case II: Both trains are travelling in opposite direction.

Speed of train A = 450/18 = 25 m/s

Let the speed of train B = x m/s

So according to question: (450 + 750)/(25 + x) = 30

x = 15

So, the speed of train B = 15 m/s

Exact speed of train B can't be determined

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

Statement II:

Let the speed of train B = x m/s

So according to question: (450 + 750)/(25 – x) = 2 × 60

1200 = 3000 – 120x

120x = 1800

x = 15

So, the speed of train B = 15 m/s

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

47. Answer: E)

Considering statements I and II together

S.I. after 1 year will be 800/5 = Rs. 160

r = 5% and t = 1 year

⇒ P = 160 × 100/5 = 3200

∵ We have Rate, Time and Principal

Required amount can be calculated.

Both the statements I and II together are sufficient.

Considering statements II and III together

r = 5%

S.I. = 6P

∵ The principal can not be calculated

∴ Both II and III together are not sufficient to answer the question.

Considering statements I and III together

S.I. = 6P

⇒ PRT/100 = 6P

⇒ 3R/100 = 6

⇒ R = 200%

S.I. = PRT/100

800 = P × 200 × 5/100

P = 80

∵ We have Principal, Rate and Time

Required amount can be calculated.

∴ Both I and III together are also sufficient to answer the question

⇒ Statement I and either statement II or statement III together are sufficient to answer the question.

48. Answer: B)

(A + B) = 68 ..... (1)

HCF of A and B = 4

From I:

(A ~ B) = 52 ..... (2)

After solving (1) and (2):

A = 60 and B = 8

OR

A = 8 and B = 60

We can't calculate the value of 'A'.

From II:

(A/4) - (B/4) < 15 and is a two digits prime number.

Case 1:

(A/4) - (B/4) = 11

(A - B) = 44 ..... (3)

From (1) and (3):

A = 56 and B = 12 and their HCF is 4

Case 2:

(A/4) - (B/4) = 13

(A - B) = 52 ..... (4)

From (1) and (4):

A = 60 and B = 8 and their HCF is 4.

We can't calculate the value of 'A'.

From III:

Let the numbers are 4a and 4b respectively (As their HCF is 4).

LCM = 4ab = 120

ab = 30 ..... (5)

Sum of A and B = 4a + 4b = 68

(a + b) = 17 ..... (6)

From (5) and (6):

a = 15 and b = 2

But we can't determine that number A is whether 4a or 4b. So, we can't calculate the value of 'A'.

From IV:

$A^2 \sim B^2 = 3536$

Here again difference is given so we'll get two possible values of A and B.

So, we can't calculate the value of 'A'.

From I and II:

Difference between A and B is 52 and from statement II it is clear that A is greater than B.

A - B = 52 ..... (7)

From (1) and (7):

A = 60 and B = 8

Hence, A = 60

Statements III and IV together are redundant.

From I and III:

From statement III we get:

A = 60 and B = 8 (difference is 52.)

OR

A = 8 and B = 60 (difference is 52.)

We can't calculate the value of 'A'.

From I and IV:

From statements I and IV together we can't calculate the value of 'A' as in both the statements difference is given.

From II and III:

From statement II we get:

A = 60 and B = 8 (LCM = 120)

OR

A = 56 and B = 12 (LCM = 168)

Hence, A = 60

Statement I and IV together are redundant.

From II and IV:

From statement II we get:

A = 60 and B = 8 (difference between square of both the numbers is 3536)

OR

A = 56 and B = 12 (difference between square of both the numbers is 2992)

Hence, A = 60

Statements I and III together are redundant.

From III and IV:

From statement III we get:

A = 60 and B = 8 (difference between square of both the numbers is 3536)

OR

A = 8 and B = 60 (difference between square of both the numbers is 3536)

We can't calculate the value of 'A'.

49. Answer: B)

Since, efficiency of man A is double of the efficiency of man B.

So, time taken by man A alone to fill the tank will be half of the time taken by man B alone to fill that tank.

From II:

Time taken by man B alone to fill the complete tank = 6 * 2 = 12 hours

Time taken by a woman to fill the complete tank = 3 * 4 = 12 hours

Time taken by man A alone to fill the complete tank = 12/2 = 6 hours

Total time taken to fill the tank = 1/[(1/12) + (1/6) + (3/12)] = 2 hours

Filling efficiency of man A = 1.5 litres per minutes

Filling efficiency of man B = (1.5)/2 = 0.75 litres per minutes

Filling efficiency of a woman = Filling efficiency of man B = 0.75 litres per minutes

Amount of water filled in 1 minute = (1.5 + 0.75 + 2.25) = 4.5 litres

Total capacity of tank = 4.5 * 60 * 2 = 540 litres

Hence statement II alone is sufficient.

From I and III:

Time taken by man A alone to fill the tank = 6 hours

Time taken by man B alone to fill the tank = 2 * 6 = 12 hours

Time taken by a woman alone to fill the tank = 12 hours

Total time taken to fill the tank = 1/[(1/12) + (1/6) + (3/12)] = 2 hours

In 1 hour total amount of water filled in the tank = 180 litres

Total capacity of tank = 180 * 2 = 360 litres

Hence, statement I and III together are sufficient.

50. Answer: A)

Artists = 5

Dancers = 8

Let, Players = m

And Singers = n

Total = 5 + 8 + m + n = 13 + m + n

From I and II:

m/(13 + m + n) = 1/5

=> 5m = 13 + m + n

=> 5m - m - n = 13

=> 4m - n = 13 ---------- (i)

And

$^5c_1 \times {}^8c_1 \times {}^mc_1 \times {}^nc_1 = 480$

=> 5 x 8 x m x n = 480

=> m x n = 480/40

=> mn = 12

=> n = 12/m ---------- (ii)

From (i) and (ii)

4m - 12/m = 13

=> $4m^2 - 12 = 13m$

=> $4m^2 - 13m - 12 = 0$

=> $4m^2 - 16m + 3m - 12 = 0$

=> 4m(m - 4) + 3(m - 4) = 0

=> (m - 4)(4m + 3) = 0

=> m = 4, -3/4(rejected)

=> m = 4

From (ii)

n = 12/4 = 3

Hence, Players = 4

And Singers = 3

Total = 13 + 4 + 3 = 20

Required probability = $(^5c_2 \times {}^3c_2)/{}^{20}c_4$

= (10 x 3)/4845

= 2/323

From I and III:

m/(13 + m + n) = 1/5

=> 5m = 13 + m + n

=> 5m - m - n = 13

=> 4m - n = 13 ---------- (i)

And

5/(13 + m + n) = ¼

=> 20 = 13 + m + n

=> m + n = 20 - 13

=> m + n = 7 ---------- (iii)

Adding (i) and (iii)

4m - n + m + n = 13 + 7

=> 5m = 20

=> m = 20/5

=> m = 4

From (ii)

4 + n = 7

=> n = 7 - 4

=> n = 3

Hence, Players = 4

And Singers = 3

Total = 13 + 4 + 3 = 20

Required probability = $({}^5c_2 \times {}^3c_2)/{}^{20}c_4$

= (10 x 3)/4845

= 2/323

From II and III:

${}^5c_1 \times {}^8c_1 \times {}^mc_1 \times {}^nc_1 = 480$

=> 5 x 8 x m x n = 480

=> m x n = 480/40

=> mn = 12

=> n = 12/m ---------- (ii)

And

5/(13 + m + n) = ¼

=> 20 = 13 + m + n

=> m + n = 20 - 13

=> m + n = 7 ---------- (iii)

From (ii) and (iii)

m + 12/m = 7

=> $m^2 + 12 = 7m$

=> $m^2 - 7m + 12 = 0$

=> $m^2 - 4m - 3m + 12 = 0$

=> m(m - 4) - 3(m - 4) = 0

=> (m - 3)(m - 4) = 0

=> m = 3, 4

From (iii)

n = 4, 3

Required value cannot be determined.

Hence, only I and either II or III together are sufficient.

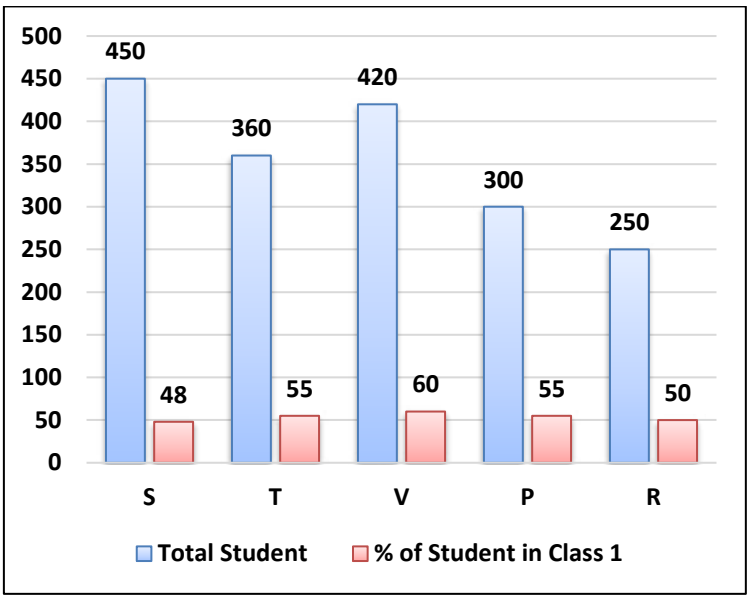
Bar + Bar Graph DI for SBI Clerk/ RBI Assist. Mains – Data Interpretation

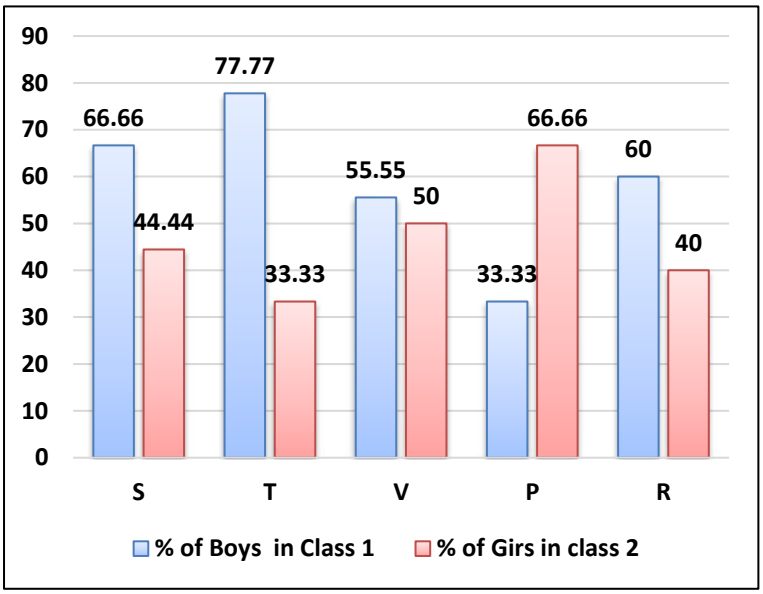
Bar + Bar Graph DI

Directions (1 – 5): Study the following information and answer the following questions:

1st Bar graph given below shows total number of students in two class of five different schools, and percentage distribution of students in class 1. While 2nd bar graph show % of Boys in Class 1 and % of girls in Class 2

Bar + Bar Graph DI for SBI Clerk/ RBI Assist. Mains – Data Interpretation





1. Find the ratio between total number of girls in Class 1 from T and P together to total number of boys in class 2 from V and P together?

a) 85:77

b) 77:87

c) 86:77

d) 88:77

e) 89:77

2. Out of total number of boys in class 1 from V school ratio between numbers of boys who got first, second and third division is 1: 2: 4. Find the total number of boys who got first and third division together in Class 1 from Class V?

a) 75

b) 90

c) 80

d) 120

e) 100

3. Find the difference between average number of girls in Class 1 from P & R together and average number of boys in Class 2 from S & T together?

a) 2

b) 1

c) 3

d) 6

e) None of these

4. Total girls in class 2 from T & S together are how much more than total boys in Class 1 from both V & P together?

a) 52

b) 35

c) 43

Bar + Bar Graph DI for SBI Clerk/ RBI Assist. Mains – Data Interpretation

d) 23

e) Can't be determined

5. What is the ratio between total numbers of girls to total number of boys from Class 2 from all the school together?

a) 224:195

b) 192:350

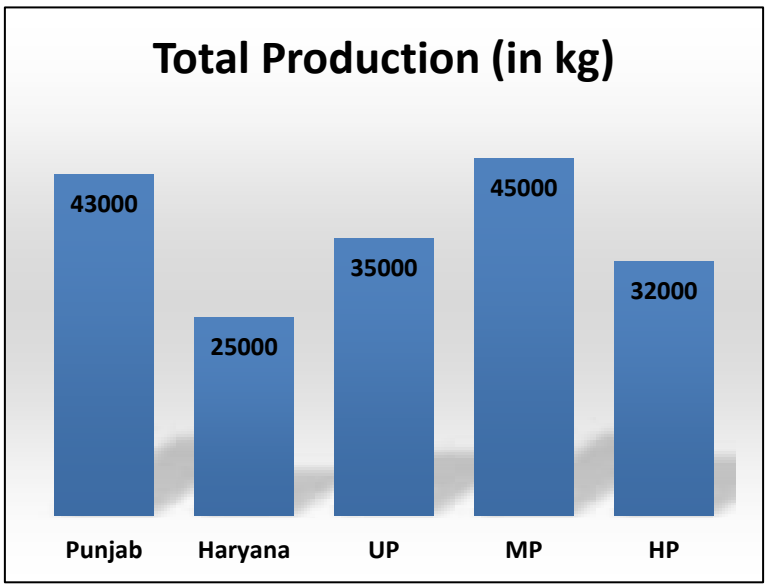
c) 225:129

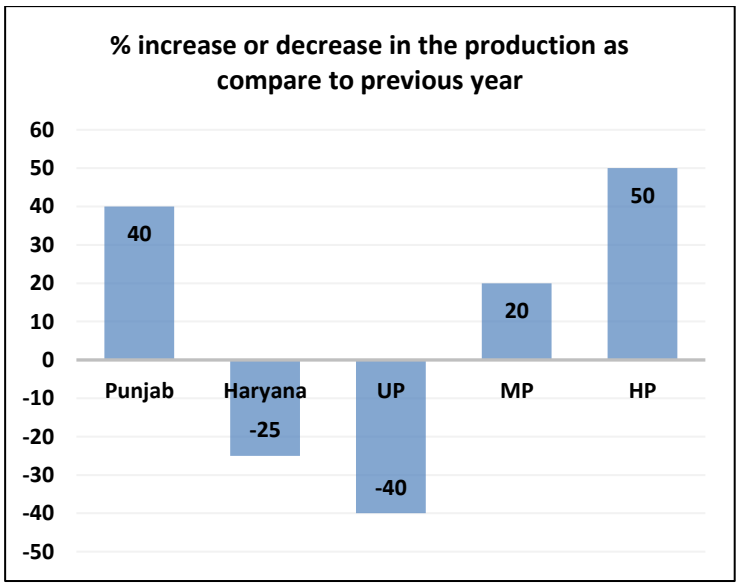
d) 350:192

e) 221:191

Directions (6 – 10): Answer the questions based on the information given below.

Following Bar graph show the total production of Wheat in 5 different state in 2019 and % increase or decrease in the production and compare to 2019 in 2020





Note : Total production mentioned above is in kgs.

6. Total wheat production in 2020 from MP and HP is sold at 120 per 100 kg of wheat than what is the revenue generated from Selling wheat in 2020 form MP and HP together?

a) 150200

b) 122400

c) 122000

d) 145000

e) None of the above

7. Average Quantity of wheat produced in 2019 from all the State together is what % more or less than the average quantity of wheat produced in 2020 from all the state together?

a) 11.50%

b) 11.60%
c) 11.70%
d) 10.86%
e) None of these

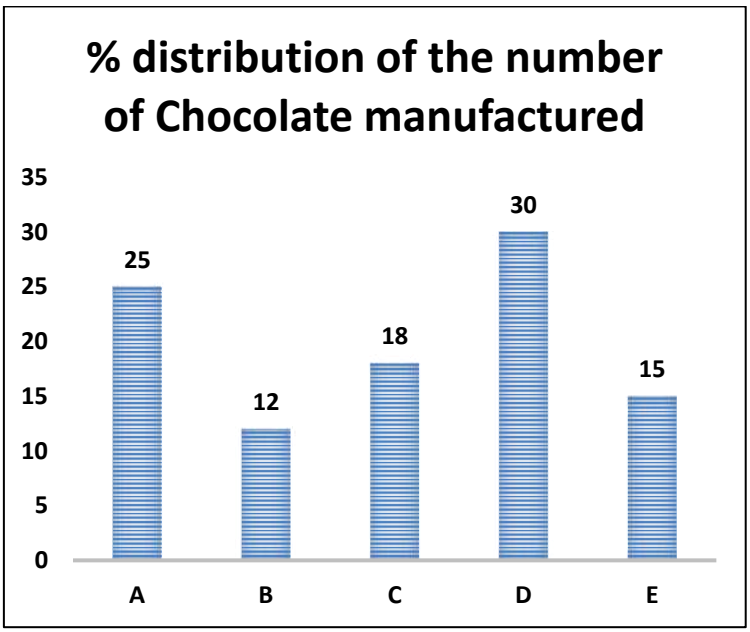
8. In 2021 production of wheat by Punjab and Haryana increased by 25 and 30 % respectively as compare to 2020. Then find the Difference between total quantity of wheat produced by HP and MP in 2020 to the Total Quantity of wheat produced by Punjab and Haryana in 2021?
a) 2375
b) 2275
c) 3375
d) 3275
e) None of the above

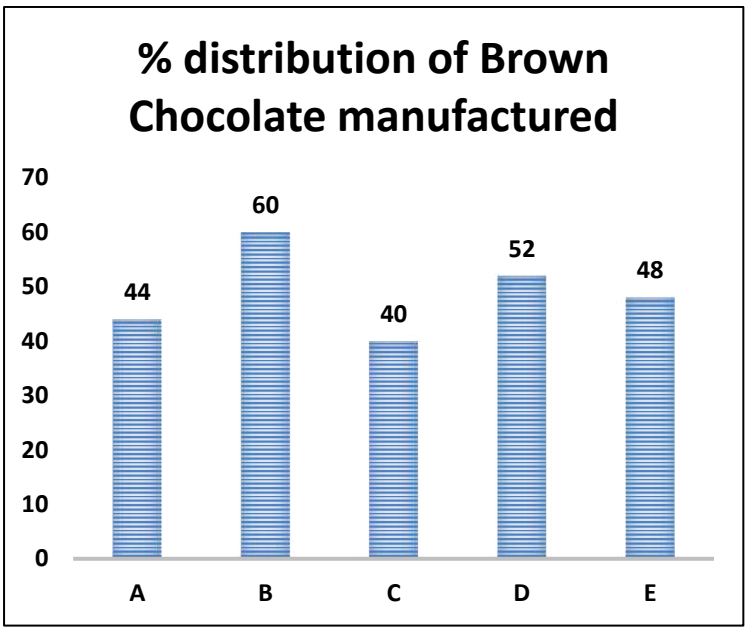
9. Per kg price of wheat is 20 in the state of HP in 2019 the price of wheat per kg increases by 25% and 20% in 2020 and 2021 respectively. While Total production of wheat in 2021 by HP state is 33.33 % more than the wheat production in 2020 from same state. Then find out the difference between sales revenue of 2020 and 2021 from HP state?
a) 27000
b) 28000
c) 35000
d) 32000
e) None of these

10. For the Bihar state total production of wheat in 2019 is 25% of average of total production of wheat by all the 5 state in 2019. And % increase in the production of wheat in 2020 and 2021 is 10% and 25% respectively than find out total wheat production by Bihar in 2021?
a) 62250
b) 61660
c) 61250
d) 61875
e) 61550

Directions (11 – 15): Answer the questions based on the information.
Five different companies manufacture two different type of Chocolate i.e. Dark and Brown Chocolate. The 1st bar graph shows the % distribution of the number of Chocolate manufactured by five different companies in 2019.
The 2nd Bar graph given below shows the % of Brown Chocolate manufactured by each company out of total number of chocolate manufactured in 2019 by that company.

Bar + Bar Graph DI for SBI Clerk/ RBI Assist. Mains – Data Interpretation





Note- Number of Brown chocolate manufactured by A is 1080 less than the number of dark chocolate manufactured by same company.

11. Number of Brown chocolate manufactured by company E in 2019 is how much % more or less than the number of Dark chocolate manufactured by Company B in 2019?

a) 50%

b) 42%

c) 45%

d) 25%

e) 55%

12. What is the average number of Chocolate manufactured by Companies B, C and E in 2019?

a) 4500

b) 5400

c) 5500

d) 5600

e) None of these

13. What is the ratio of the number of Brown chocolate manufactured by Company C in 2019 to the number of Dark Chocolate manufactured by Company E in 2019?

a) 14:13

b) 16:13

c) 15:11

d) 12:13

e) None of these

14. Find the difference between the number of Brown Chocolate manufactured by B and C in 2019?

Bar + Bar Graph DI for SBI Clerk/ RBI Assist. Mains – Data Interpretation

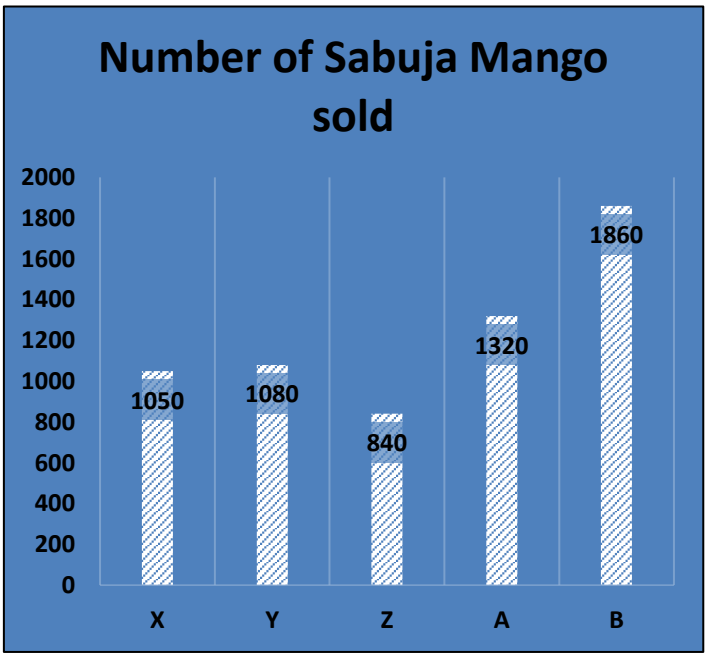
a) 5
b) 0
c) 6
d) 7
e) None of these

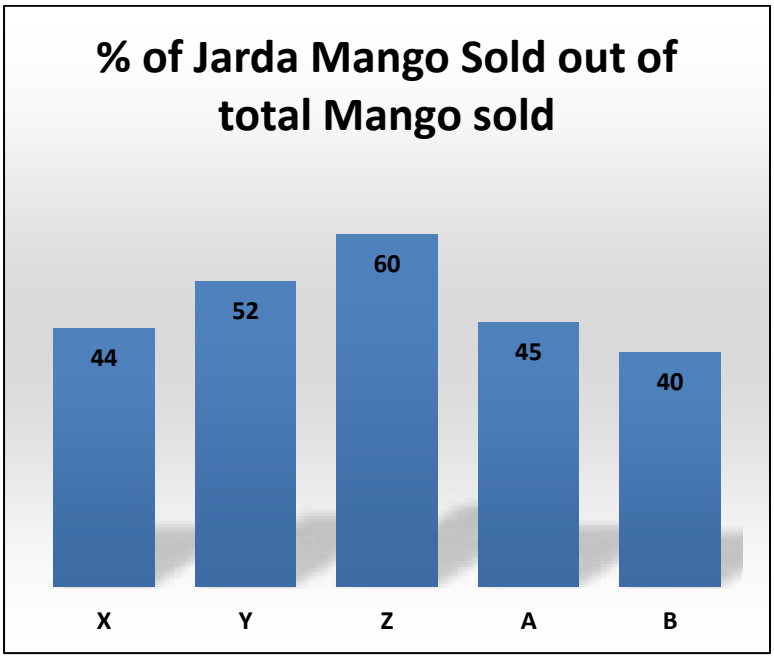
15. Company B sold 50% and 50% of the Dark and Brown Chocolate respectively manufactured by it in 2019. Find the total number of Chocolate sold by company B in 2019?

a) A
b) B
c) C
d) D
e) E

Directions (16-20): Answer the questions based on the information given below.

Two types of mango are sold by five different Shop-keepers in 2019. The bar graph given below show the number of Sabuja Mango sold and 2nd bar graph given below show the % of Jarda Mango sold out of total Mango sold by each shop-keeper in 2019.





16. What is the ratio of number of Jarda mango sold by Shop-keeper X to total number of Mango sold by Shop-keeper Z in 2019?

a) 5:11
b) 7:22
c) 11:28

d) 9:19

e) None of the above

17. What is the average number of Mango sold by Shop-Keeper X, Y and Z in 2019?

a) 2025

b) 1425

c) 2075

d) 2050

e) None of these

18. Total number of Mango sold by Shop-Keeper B in 2019 is how much % more/less than the total number Mango sold by Company X in 2019?

a) 68.33%

b) 47.25%

c) 65.33%

d) None of above

e) Can't be determined

19. Which Shop-keeper sold 3rd highest number of Jarda Mango in 2019?

a) Y

b) X

c) Z

d) A

e) None of these

20. In 2019 Selling price of Jarda and Sabuja mango is 25 and 20 Rs. Respectively than find out the total sale revenue of Shop-keeper Y in 2019?

a) 35050

b) 50590

c) 55730

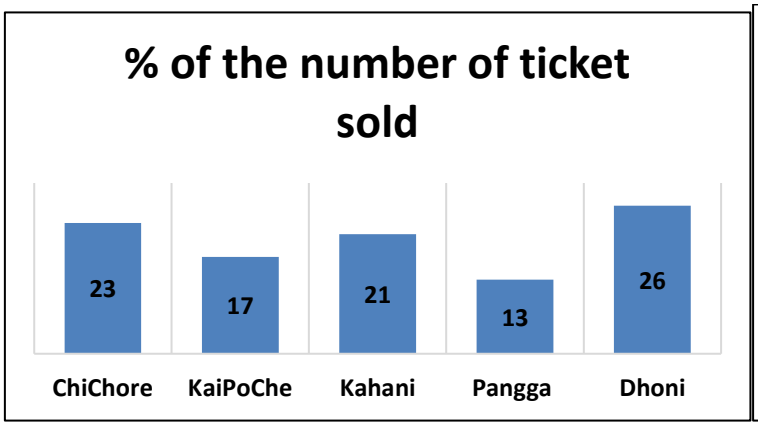
d) 57590

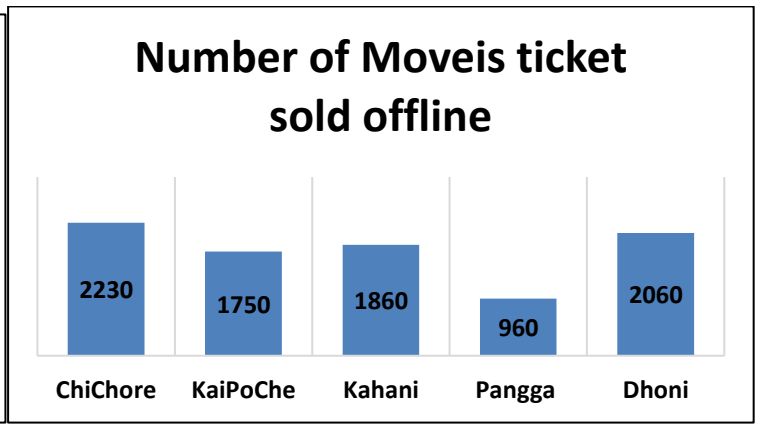
e) 50850

Directions (21 – 25): Study the information carefully and answer the question asked below.

The 1st Bar graph below show the % distribution of Total number of ticket of five different movies sold in 2020. The 2nd Bar graph given below shows the distribution of the number of Ticket of Five different movies sold online in 2020.

Bar + Bar Graph DI for SBI Clerk/ RBI Assist. Mains – Data Interpretation





Note – Total number of Movies ticket of PANGGA sold in 2020 = 2080

(Total number of Ticket sold = Number of ticket sold Online + Number of ticket sold offline)

21. What is the difference between the number of Movies ticket of KaiPoChe sold offline and number of ticket of Pangga sold online in 2020?

a) 360

b) 630

c) 560

d) 650

e) 380

22. Number of Movies ticket of Chichore sold offline in 2020 is how much % more or less than the number of movies ticket of Kahani sold online in 2020?

a) 35.35%

b) 35.65%

c) 45.45%

d) 35.27%

e) None of these

23. What is the average number of Movies ticket of all the five movies ticket sold online in 2020?

a) 2628

b) 2631

c) 3110

d) 3525

e) None of these

24. Total number of movies ticket of Chichore sold in 2021 is 125% more than that of previous year. Find the number of movies ticket of Chichore sold in 2021?

a) 12455

b) 11435

c) 13455

d) 13544

e) None of these

Bar + Bar Graph DI for SBI Clerk/ RBI Assist. Mains – Data Interpretation

25. What is the ratio of the number of movies ticket of Pangga sold offline to the number of movies ticket of Dhoni sold online in 2020?

a) 3:5

b) 22:21

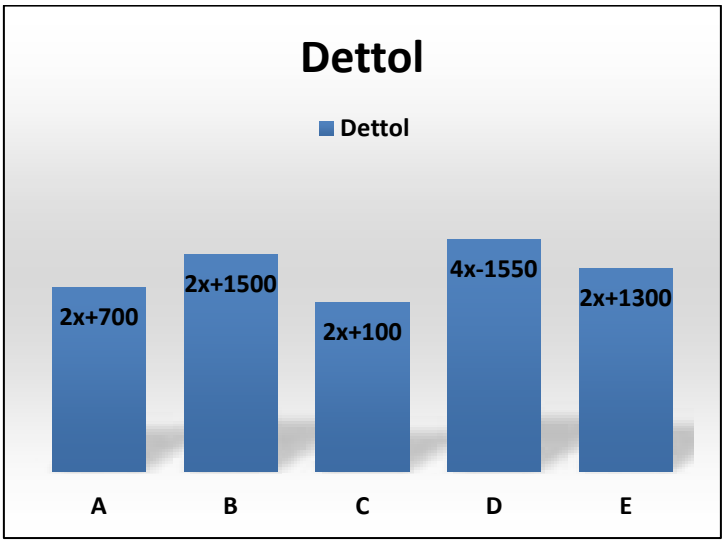
c) 27:35

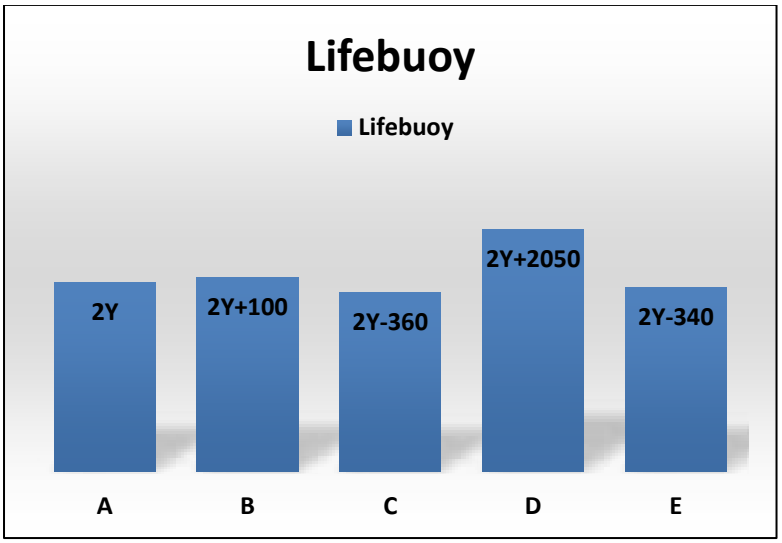
d) 8:35

e) 16:35

Directions (26 – 30): Read the following information carefully and answer the following questions carefully.

The Bar graph given below shows the number of Hand Sanitizer of Dettol and Lifebuoy Sold by five different whole sellers in March 2020.





Note = I - Price of Dettol and Lifebuoy Hand-sanitizer is 40 and 50 rupees respectively

II- Total revenue generated by C in March 2020 = 386000

III- Total number of Hand-sanitizer sold by B in March 2020 = 10400

26. What is the ration of the total number of Hand-sanitizer Sold C in March 2020 to that by E in March 2020?

a) 427:488

b) 155:188

c) 185:388

d) 175:427

e) 327:288

27. The average number of Lifebuoy Hand-Sanitizer sold by A, B, C and D in 2020 is?

a) 4725.5

b) 2574.5

c) 5274.5

d) 5247.5

Bar + Bar Graph DI for SBI Clerk/ RBI Assist. Mains – Data Interpretation

e) None of above

28. If Each bottle of Dettol Hand-Sanitizer and Lifebuoy Hand-Sanitizer contain 100ml quantity, then find the difference between the total Quantity of Sanitizer in Liters Sold by A and that by D in 2020?

a) 505 liters

b) 690 liters

c) 960 liters

d) 590 liters

e) None of these

29. Out of total number of Hand-Sanitizer of Dettol and Lifebuoy sold by B, 52% and 3/7, respectively were Rose flavor. Find the total number of Hand-Sanitizer of Rose flavor sold by B in March2020?

a) 4950

b) 3560

c) 6490

d) 2570

e) 4960

30. In the question two quantities I and II are given. You have to solve both the quantities to establish the correct relation between quantities of I and II and Choose the correct option.

Quantities I – The total number of Hand-Sanitizer sold by D in 2020 are how much % more or less than the total number of Hand-Sanitizer Sold by A in 2020.

Quantities II – The number of Dettol Hand-Sanitizer sold by B in 2020 are how much % more or less than the number of Dettol Hand-Sanitizer sold by C in 2020.

a) I<II

b) I=II

c) I<=II

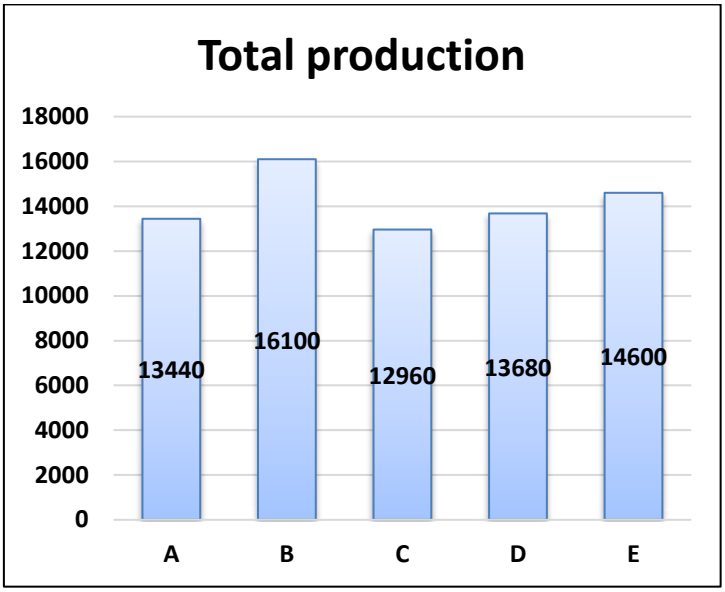
d) I>=II

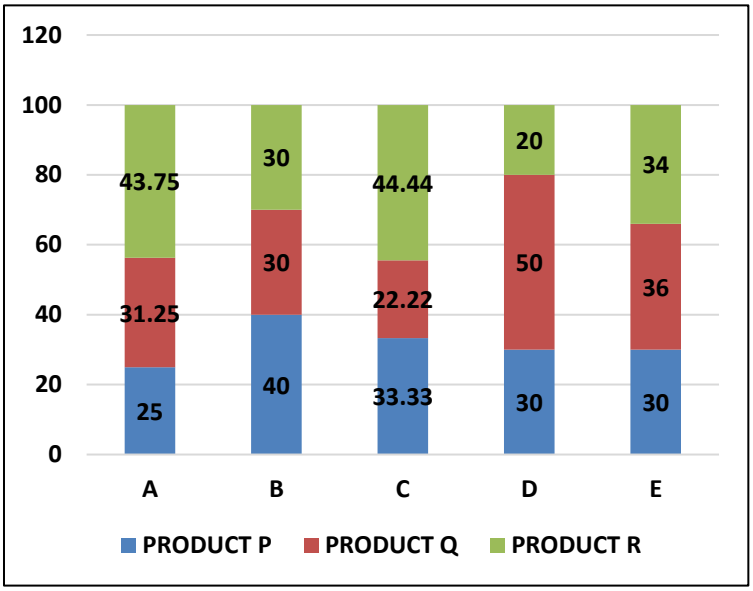
e) I>II

Directions (31 – 35): Read the following information carefully and answer the following questions given below.

There are 5 companies who produce 3 different type of product. The bar graph given below shows the total number of Goods produced by each company and the 2nd bar graph given below shows the % distribution of 3 type of product produced by each company

Bar + Bar Graph DI for SBI Clerk/ RBI Assist. Mains – Data Interpretation





31. Total number of Product P produced by A and B is what % of Total number of product R produced by C and D together?

a) 115.35%

b) 125.15%

c) 150%

d) 241.25%

e) None of these

32. What is the ratio of total P type of product produced by E and D to the total Q type of product produced by B and C together?

a) 1615:1825

b) 1414:1285

c) 1516:1285

d) 1825:1515

e) None of these

33. Total production of A and B is what % of total Q type of product Produced by all the Companies together?

a) 139.50%

b) 129.25%

c) 123.05%

d) 155.20%

e) None of these

34. Total Q type of product produced by all the five companies together is what % of Total R type of product produced by all the five companies together?

a) 133%

b) 118%

c) 103.05%

d) 99.32%

e) None of these

Bar + Bar Graph DI for SBI Clerk/ RBI Assist. Mains – Data Interpretation

35. Type P product manufactured by Company C is sold for Rs. 5 per unit. Find the total revenue generated after selling all product P by Company C?

a) 24875

b) 30875

c) 21375

d) 22850

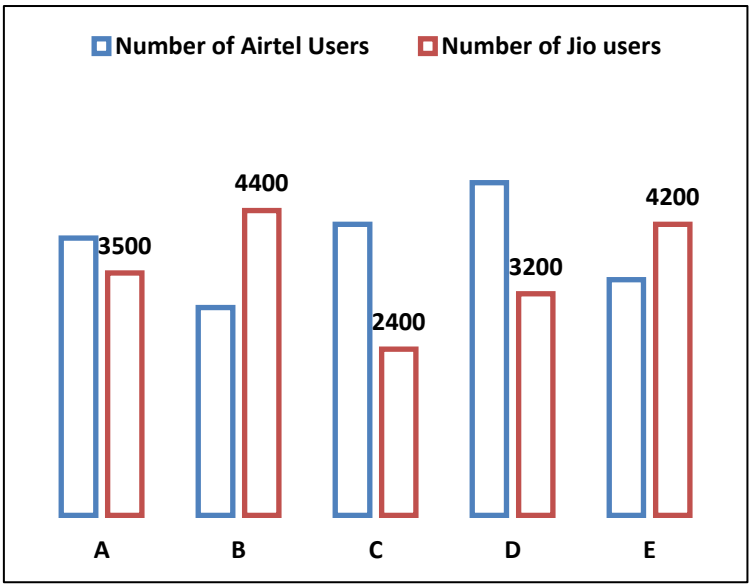
e) None of the above

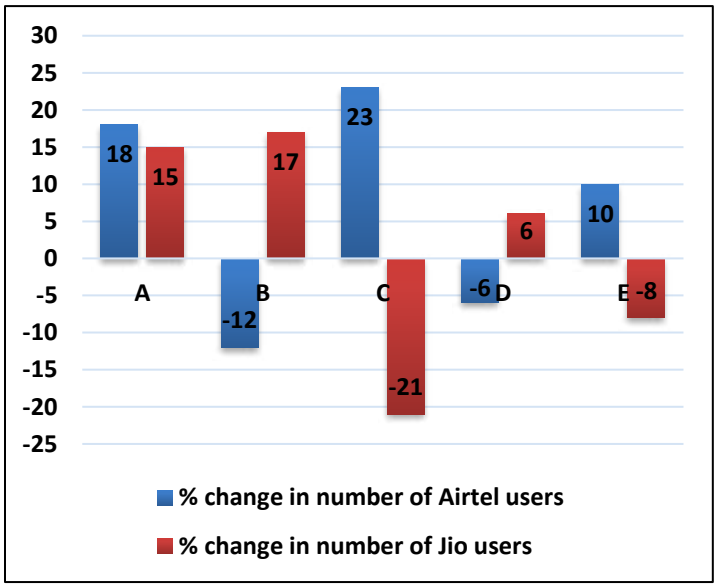
Directions (36 – 40): Read the data given below and answer the following questions.

The bar chart given below shows the number of two different Internet service provider (Airtel and Jio) in five different cities in 2019.

2nd Bar graph below show the % change in the number of Airtel user and Jio users in 2020 in each city with respect to the number of Airtel and Jio users of 2019.

Note – The number of Airtel user in City A is 450 less than the city C which is 1350 less than city D. The Airtel users in City B is 2100 less than city A. the number of Airtel user of City A is 900 more than the City E. The average number of users of Airtel in each city is 4100.





36. If the ratio of the number of Airtel user in North, East, West and South of city A and city B in 2020 is 4:5:2:6 and 8:4:5:5 respectively, then the number Airtel users in North of City A and B in 2020 together is what % of the total number of Airtel users in City A and B together in 2019?

a) 29.55%

b) 29.1875%

c) 14.1875%
d) 28.25%
e) None of these

37. If the number of clients of Airtel user in city C and Jio in city B in 2021 increases by 20% and 50% respectively with respect of previous year, then the number of Jio user in City B in 2021 is how much more or less than the number of Airtel user of city C in 2021?
a) 6255
b) 5105
c) 5200
d) 5352
e) 5120

38. If the number Male user of Jio in city D and E in 2020 is (37/53) and 55% of the total number of Jio users in the respective city in 2020, then the number of female users of both the cites D and E together is approximately what % of total number of Jio users in all the given cities together in 2019?
a) 27.55%
b) 25.30%
c) 16.53%
d) 26.50%
e) 25.62%

39. Find the total number of Jio users in 2020 from all the cities together?
a) 18440
b) 18240
c) 16740
d) 18900
e) None of these

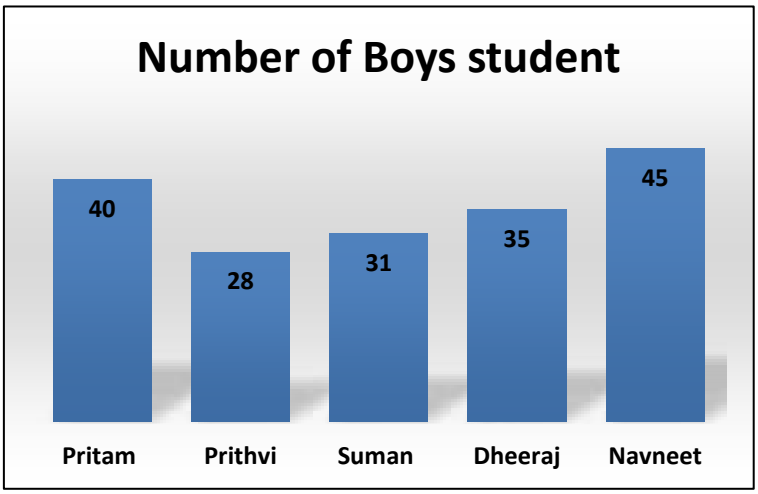
40. What is the difference between total number of Airtel user and Jio user from 2019 to 2020 from the cities of A and B?
a) 1895
b) 2295
c) 1495
d) 1965
e) 1695

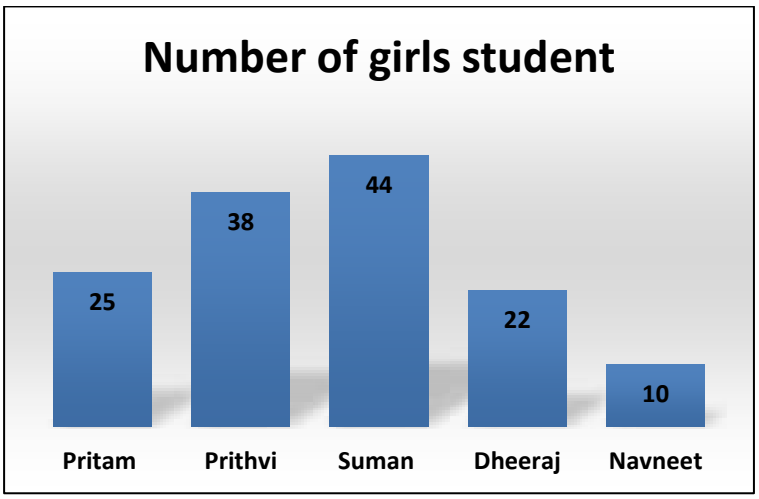
Direction (41-45): Read the data given below and answer the following questions.

Five different Tuition Teachers teach to different number of male and female student. The Bar graph given below shows the number of Male and the number of Female students teaches by these five Teachers.

Note: Number of student teaches by teacher is = number of male student + number of female student

Bar + Bar Graph DI for SBI Clerk/ RBI Assist. Mains – Data Interpretation





41. Tuition fees of one Boys and one girl is 500 and 600 rupees respectively, then find the difference between Total tuition fees collected by Pritam from Boys to girls?

a) 5000

b) 5200

c) 5500

d) 5150

e) None of these

42. Total students of Prithvi and Suman together are what % more than the total number of student of Navneet and Dheeraj?

a) 25.25%

b) 15.92%

c) 19.9%

d) 25.9%

e) None of these

43. What is the ratio of the number of student studying with Dheeraj to the number of student studying with Pritam?

a) 25:52

b) 52:43

c) 61:23

d) 65:53

e) 57:65

44. Average number of boy student is what % of average number of girls student of all the teachers?

a) 135.75%

b) 165%

c) 128.77%

d) 145.45%

e) None of these

Bar + Bar Graph DI for SBI Clerk/ RBI Assist. Mains – Data Interpretation

45. Total number students taught by Suman and Navneet is how much % of total number of student taught by Prithvi and Pritam together?

a) 201-1/7%

b) 100.77%

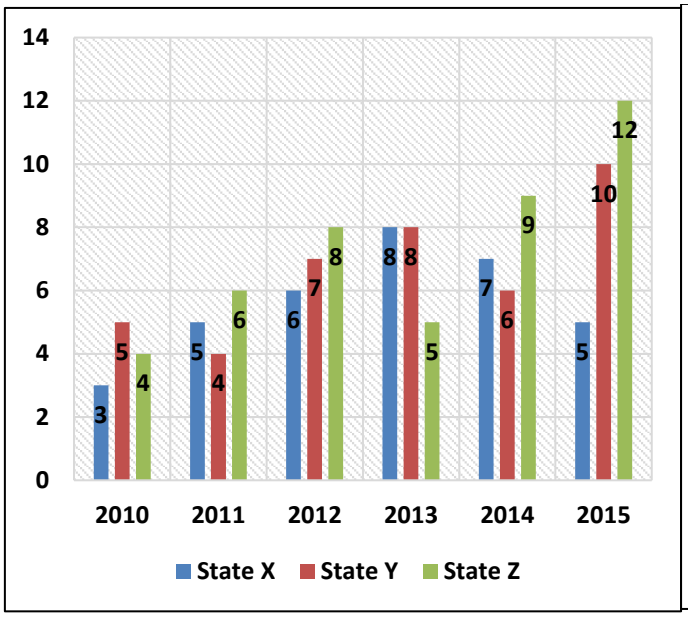
c) 122-2/9%

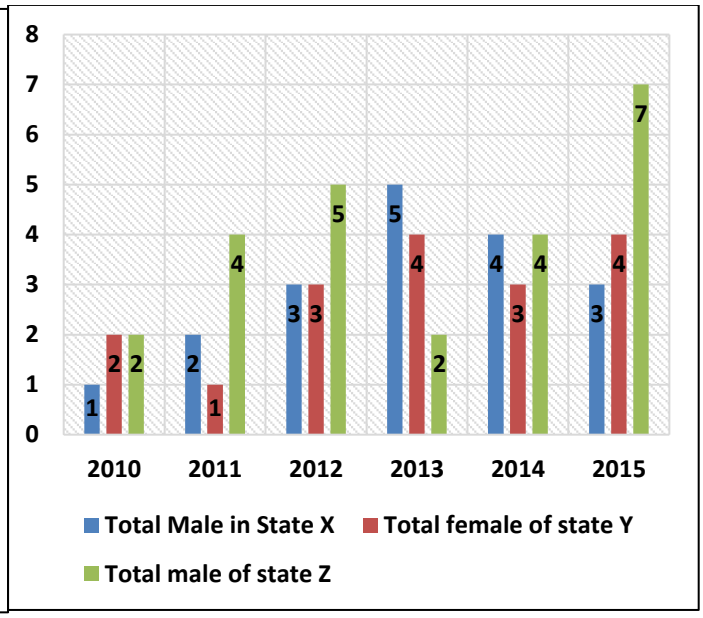
d) 121%

e) None of these

Directions (46 – 50): Read the data given below and answer the following questions.

The following Bar graph show the total number of students (in 1000) enrolled in three different state in 6 different year. While 2nd bar graph show the total male in state X, total female of state Y and total male of state Z.





46. What is the average number of student enrolled form the state Z from all the year together?

a) 8000

b) 3010

c) 3015

d) 2855

e) 3115

47. Female student enrolled in year 2012 from state X and y is what % of Male student enrolled in year 2013 form state Y and Z together?

a) 57.5%

b) 67.5%

c) 75%

d) 100%

e) 71.2%

Bar + Bar Graph DI for SBI Clerk/ RBI Assist. Mains – Data Interpretation

48. Find the ratio of total male student enrolled in 2013 and 2014 form all the state to female student enrolled in 2014 and 2015 from all the state?

a) 1:3

b) 1:2

c) 2:1

d) 1:1

e) None of the above

49. Total student enrolled in 2013, 2014 and 2015 from Y is how much more or less than the total student enrolled form State X from all the year?

a) 10000

b) 11000

c) 12000

d) 11500

e) 10500

50. Male student enrolled from State Y from all the year together is what % of Female student enrolled from the state of X from all the year together?

a) 114.42%

b) 116.45%

c) 117.42%

d) 143.75%

e) 121.15 %

Bar + Bar DI – Answer and Explanations

1-5. – Common Explanation

School	Total student	Total student Class 1	Boys (Class1)	Girls (Class1)	Total student Class 2	Boys (Class2)	Girls (Class2)
S	450	450 * 48% =216	216*2/3 =144	216-144 = 72	450-216=234	234*4/9 = 104	234-104 = 130
T	360	360*55% = 198	198*7/9 = 154	198-154=44	360-198 = 162	162*1/3 = 54	162-54 = 108
V	420	420*60% = 252	252*5/9 = 140	252-140= 112	420-252 = 168	168*1/2 = 84	168-84 = 84
P	300	300*55% = 165	165*1/3 = 55	165-55 = 110	300-165 = 135	135*6/9 = 90	135 -90 = 45
R	250	250*50% =	125*6/10 =	125-75 = 50	250-125 =	125*2/5 =	125-50 =

Bar + Bar Graph DI for SBI Clerk/ RBI Assist. Mains – Data Interpretation

		125	75		125	50	75

1. Answer: B)

Total number of girls in Class 1 from T and P together = 44+110 = 154

Total number of boys in class 2 from V and P together = 84+90 = 174

Required ratio = 154:174 = 77:87

2. Answer: E)

Out of total number of boys in class 1 from V school ratio between numbers of boys who got first, second and third division is 1: 2: 4

Total number of boys who got first and third division together in Class 1 from Class V = 140*(1+4)/7 = 100

3. Answer: B)

Average number of girls in Class 1 from P & R together = (110+50)/2 = 80

Average number of boys in Class 2 from S & T together= (104+54)/2 =79

Required difference = 80-79 = 1

4. Answer: C)

Total girls in class 2 from T & S together = 108+130 = 238

Total boys in Class 1 from both V & P together= 140+55 = 195

Required answer = 238 – 195 = 43

5. Answer: E)

Total numbers of girls Class 2 from all the school together = 130+108+84+45+75 = 442

Total number of boys from Class 2 from all the school together = 104+54+84+90+50 = 382

Required ratio = 442:382 = 221:191

6-10. Common Explanation:

State	Total production (2019)	Total production (2020)
Punjab	43000	43000*140% = 60200
Haryana	25000	25000*75% = 18750
UP	35000	35000*60% = 21000

MP	45000	45000*120% = 54000
HP	32000	32000*150% = 48000

6. Answer: B)

Total wheat production in 2020 from MP and HP is sold at 120 per 100 kg of wheat.

Wheat Production in 2020 form MP and HP together =54000+48000 = 102000

Price of 100 kg is 120

Then Price of 102000 kg = 102000/100 *120 = 122400

7. Answer: D)

Average Quantity of wheat produced in 2019 from all the State together = (43000+25000+35000+45000+32000)/5 = 36000

Average quantity of wheat produced in 2020 from all the state together= (60200+18750+21000+54000+48000)/5 = 40390

% less = (36000-40390)/40390 * 100 = 4390/40390*100 = 10.86%

8. Answer: A)

In 2021 production of wheat by Punjab and Haryana increased by 25 and 30 % respectively as compare to 2020

Punjab = 60200*125% = 75250

Haryana = 18750*130% = 24375

Difference between total quantity of wheat produced by HP and MP in 2020 to the Total Quantity of wheat produced by Punjab and Haryana in 2021

= (48000+54000) - (75250+24375) = 2375

9. Answer: D)

Per kg price of wheat is 20 in the state of HP in 2019

The price of wheat per kg increases by 25% and 20% in 2020 and 2021 respectively.

2020 = 20 * 125% = 25

2021 = 25*120% = 30

Total production of wheat in 2021 by HP state is 33.33 % more than the wheat production in 2020 from same state.

(33.33 % more = 4/3 in fraction)

48000*4/3 = 64000

Difference between sales revenue of 2020 and 2021 from HP state = (64000*30) – (48000*25) = 192000 – 160000 = 32000

10. Answer: D)

For the Bihar state total production of wheat in 2019 is 25% of average of total production of wheat by all the 5 state in 2019.

Bar + Bar Graph DI for SBI Clerk/ RBI Assist. Mains – Data Interpretation

Bihar 2019 = 125/100 * (43000+25000+35000+45000+32000)/5 = 45000

% increase in the production of wheat in 2020 and 2021 is 10% and 25% respectively than find out total wheat production by Bihar in 2021

Bihar 2021 (Wheat production) = 45000 * 110/100 * 125/100 = 61875

11-15.- Common Explanation:

Let, Total chocolate manufactured by all the company = 100x

Total chocolate manufactured by A = 100x * 25% = 25x

Total brown chocolate manufactured by A = 25x * 44% = 11x

Total Dark chocolate manufactured by B = 25x – 11x = 14x

ATQ,

14x – 11x = 1080

x = 1080/3 = 360

100x = 360*100 = 36000

11. Answer: A)

Number of Brown chocolate manufactured by company E in 2019 = 36000*15% * 48% = 2592

The number of Dark chocolate manufactured by Company B in 2019 = 36000*12% * (100-60)% = 1728

% more = 2592-1728 / 1728 *100 = 50%

12. Answer: B)

Average number of Chocolate manufactured by Companies B, C and E in 2019

Required average = (12%+18%+15%)/3 * 36000 = 5400

13. Answer: D)

Number of Brown chocolate manufactured by Company C in 2019 = 36000*18% * 40% = 2592

Number of Dark Chocolate manufactured by Company E in 2019 = 36000*15% * (100-48)% = 2808

Required ratio = 2592:2808 = 12:13

14. Answer: B)

Difference between the number of Brown Chocolate manufactured by B and C in 2019

Brown chocolate by B = 36000*12% * 60% = 2592

Brown chocolate by C = 36000 * 18% * 40% = 2592

Required difference = 2592 – 2592 = 0

15. Answer: B)

Required sum = {36000*12%*(100-60)% *50%} + {36000*12%*60%*65%} = 864+1296 = 2160

16-20. Common Explanation:

	Sabuja mango	Jarda mango
X	1050	1050/(100-44) * 44 = 825

Bar + Bar Graph DI for SBI Clerk/ RBI Assist. Mains – Data Interpretation

Y	1080	1080/(100-52) * 52 =1170
Z	840	840/ (100-60) *60 = 1260
A	1320	1320/ (100-45) * 45 = 1080
B	1860	1860/(100-40) * 40 = 1240

16. Answer: C)

Required ratio = Jarda mango sold by Shop-keeper X : total number of Mango sold by Shop-keeper Z

= 825:(840+1260) = 825:2100 = 11:28

17. Answer: C)

Average number of Mango sold by Shop-Keeper X, Y and Z in 2019

= {(1050+825) + (1080+1170) + (840+1260)}/ 3 = 2075

18. Answer: C)

Total number of Mango sold by Shop-Keeper B in 2019 = 1860+1240 = 3100

Total number Mango sold by Company X in 2019 = 1050+825 = 1875

% more = (3100 – 1875) / 1875 *100 = 65.33%

19. Answer: A)

It is clear from above table that 3rd highest Jarda Mango produced by = Y = 1170

20. Answer: E)

In 2019 Selling price of Jarda and Sabuja mango is 25 and 20 Rs.

total sale revenue of Shop-keeper Y in 2019 = (1080*20) + (1170*25) = 21600 + 29250 = 50850

21-25. Common Explanation:

Given That Total PANGA movies ticket sold = 13% = 2080

Accordingly = 100 % (Total ticket sold of all the movies) = 2080/13 * 100 = 26000

Movies	Total Ticket Sold	Total offline ticket sold	Total online Ticket sold
CHICHORE	23% of 26000 = 5980	2330	5980-2330 = 3650
KIPOCHE	17% of 26000 = 4420	1750	4420-1750 = 2670
KAHANI	21% of 26000 = 5460	1860	5460-1860 = 3600
PANGGA	13% of 26000 = 3380	960	2080 -960 = 1120
DHONI	26% of 26000 = 4160	2060	4160 – 2060 = 2100

Bar + Bar Graph DI for SBI Clerk/ RBI Assist. Mains – Data Interpretation

21. Answer: B)

Difference between the numbers of Movies ticket of KaiPoChe sold offline and number of ticket of Pangga sold online in 2020

= 1750 – 1120 = 630

22. Answer: D)

Movies ticket of Chichore sold offline in 2020 = 2330

Movies ticket of Kahani sold online in 2020 = 3600

% less = (2330-3600)/3600 * 100 = 35.27%

23. Answer: A)

Average number of Movies ticket of all the five movies ticket sold online in 2020

= (3650+2670+3600+1120+2100)/5 = 2628

24. Answer: C)

Total number of movies ticket of Chichore sold in 2021 are 125% more than that of previous year

= 225/100 * (2330+3650) = 13455

25. Answer: E)

Ratio of the number of movies ticket of Panga sold offline to the number of movies ticket of Dhoni sold online in 2020

= 960: 2100

= 16:35

26-30. Common Explanation

ATQ

(2x+100) * 40 + (2y -360) * 50 = 386000

80x + 4000 + 100y – 18000 = 386000

80x +100y = 400000 ---------- (1)

And

2x + 1500 + 2y + 100 = 10400

2x+2y = 8800 ---------- (2)

By solving (1) and (2)

80x +100y = 400000

40(2x+2y = 8800)

---

20 y = 48000

y = 2400

x = 2000

	Dettol	Lifebuoy
A	2*2000 +700 = 4700	2*2400 = 4800
B	2*2000+1500 = 5500	2*2400 +100 = 4900
C	2*2000+100= 4100	2*2400 – 360 = 4440
D	4*2000+1550 = 9550	2*2400 + 2050= 6850
E	2*2000+1300 = 5300	2*2400 – 340 =4460

26. Answer: A)

Ratio of the total number of Hand-sanitizer Sold C in March 2020 to that by E in March 2020

= (4100+4440) : (5300+4460) = 8540:9760 = 427:488

27. Answer: C)

The average number of Lifebuoy Hand-Sanitizer sold by A, B, C and D in 2020 is

= (4800+4900+4440+6850)/4 = 5274.5

28. Answer: B)

Each bottle of Dettol Hand-Sanitizer and Lifebuoy Hand-Sanitizer contain 100ml quantity

Difference between the total Quantity of Sanitizer in Liters Sold by A and that by D in 2020

= {(4700+4800)*100} – {(9550+6850)*100}

= 950000 – 1640000

= 690000 ml Or

690000/1000 = 690 liters

29. Answer: E)

31-35. Common Explanation

Out of total number of Hand-Sanitizer of Dettol and Lifebuoy sold by B, 52% and 3/7, respectively were Rose flavor.

Total number of Hand-Sanitizer of Rose flavor sold by B in 2020 = 52% * 5500 + 3/7 * 4900

= 2820 +2100 = 4960

30. Answer: E)

Quantities I – The total number of Hand-Sanitizer sold by D in 2020 are how much % more or less than the total number of Hand-Sanitizer Sold by A in 2020.

= {(9550+6850) – (4700+4800)}/(4700+4800) *100

= 6900/9500 = 72.63%

Quantities II – The number of Dettol Hand-Sanitizer sold by B in 2020 are how much % more or less than the number of Dettol Hand-Sanitizer sold by C in 2020.

= {(5500+4900) – (4100+4440)}/(4100+4440) *100

= 1860/8540 = 21.78%

Hence I>II

Bar + Bar Graph DI for SBI Clerk/ RBI Assist. Mains – Data Interpretation

Company	Total	Product P	Product Q	Product R
A	13440	13440*25% = 3360	13440*31.25% = 4200	13440*43.75%=5880
B	16100	16100*40%=6440	16100*30%=4830	16100*30%=4830
C	12960	12960*33.33% = 4320	12960*22.22% =2880	12960*44.44%=5760
D	13680	13680*30%=4104	13680*50%=6840	13680*20%=2736
E	14600	14600*30%=4380	14600*36%=5256	14600*34% = 4964

31. Answer: A)

Total number of Product P produced by A and B = 3360+6440 = 9800

Total number of product R produced by C and D together= 5760+2736 = 8496

Required % = 9800/8496 * 100 = 115.35%

32. Answer: B)

Total P type of product produced by E and D =4380+4104=8484

Total Q type of product produced by B and C together = 4830+2880=7710

Required ratio = 8484:7710 = 1414:1285

33. Answer: C)

Total production of A and B =13440+16100= 29540

Total Q type of product Produced by all the Companies together =4200+4830+2880+6840+5256 =24006

Required % = 29540/24006 *100 = 123.05%

34. Answer: D)

Total Q type of product produced by all the five companies = 4200+4830+2880+6840+5256 = 24006

Total R type of product produced by all the five companies = 5880+4830+5760+2736+4964 = 24170

Required % = 240006 / 24170 *100 = 99.32%

35. Answer: E)

Type P product manufactured by Company C is sold for Rs. 5 per unit

Total revenue generated after selling all the product P by Company C = 4320*5 = 21600

36-40. Common Explanation

ATQ,

For Airtel users

Total users = 4100*5 = 20500

Airtel users from

Let, A = A number of users

Bar + Bar Graph DI for SBI Clerk/ RBI Assist. Mains – Data Interpretation

B = A – 2100

C = A + 450

D = A + 1800

E = A - 900

So,

A + A -2100 + A+450 + A+1800+ A -900 = 20500

5A =21250

A = 4250

	AIRTEL (2019)	JIO (2019)	AIRTEL 2020	JIO 2020
A	4250	3500	4250*118% = 5015	3500*115% =4140
B	4250-2100=2150	4400	2150*88% =1892	4400*117% = 5148
C	4250+450= 4700	2400	4700*123% = 5781	2400 * 79% = 1896
D	4250+1800=6050	3200	6050*94% = 5687	3200 * 106% = 3392
E	4250-900=3350	4200	3350*110% = 3685	4200*92% = 3864

36. Answer: B)

ratio of the number of Airtel user in North, East, West and South of city A and city B in 2020 is 4:5:2:6 and 8:4:5:5 respectively

Number Airtel users in North of City A and B in 2020 together =(5015*4/17) + (1892*8/22) = 1180 +688 =1868

Total number of Airtel users in City A and B together in 2019 = 4250+2150=6400

Required % = 1868/6400 *100 = 29.1875%

37. Answer: D)

Number of clients of Airtel user in city C and Jio in city B in 2021 increases by 25% and 50% respectively with respect of previous year

Airtel (C -2021) = 1896*125/100 = 2370

Jio (B-2021) = 5148*150/100 = 7722

Required difference = 7722 – 2370 = 5352

38. Answer: C)

Bar + Bar Graph DI for SBI Clerk/ RBI Assist. Mains – Data Interpretation

If the number Male user of Jio in city D and E in 2020 is (37/53) and 50% of the total number of Jio users in the respective city in 2020

Male user of JIO in city D = 3392*37/53 = 2368

Male user of JIO in City E = 3864*50% = 1962

Number of female users of both the cites D and E = (3392+3864) – (2368+1962) = 2926

Total number of Jio users in all the given cities together in 2019 = 3500+4400+2400+3200+4200 = 17700

Required % = 2926/17700 = 16.53%

39. Answer: A)

Total number of Jio user in 2020 = 4140+5148+1896+3392+3864 = 18440

40. Answer: A)

Difference between total number of Airtel user and Jio user from 2019 to 2020 from the cities of A and B

= (4250+2150+3500+4400) – (5015+1892+4140+5148)

= 14300 – 16195

= 1895

41-45.

41. Answer: A)

Tuition fees of one Boy and one girl is 500 and 600 rupees respectively, then find the difference between Total tuition fees collected by Pritam from Boys to girls

= (40*500) – (25*600)

= 20000-15000 = 5000

42. Answer: D)

Total students of Prithvi and Suman together =28+38+31+44 = 141

Total number of student of Navneet and Dheeraj= 45+10+35+22 = 112

Required % = 141-112 / 112 *100 = 25.9%

43. Answer: E)

Ratio of the number of student studying with Dheeraj to the number of student studying with Pritam

= 35+22 : 40+25

= 57:65

44. Answer: C)

Average number of boys student = (40+28+31+35+45)/5 = 35.8

Average number of girl student of all the teachers= (25+38+44+22+10)/5 = 27.8

Required % = 35.8/27.8 *100 = 128.77%

45. Answer: B)

Total number students teaches by Suman and Navneet = 31+44+45+10 = 130

Total number of student teaches by Prithvi and Pritam together= 40+25+28+38 = 131

Required % = 131/130 *100 = 100.77%

46-50. Common Explanation

Bar + Bar Graph DI for SBI Clerk/ RBI Assist. Mains – Data Interpretation

Year	Total State X	Male (X)	Female (X)	Total State Y	Male (Y)	Female (Y)	Total State Z	Male (Z)	Female (Z)
2010	3000	1000	2000	5000	3000	2000	4000	2000	2000
2011	5000	2000	3000	4000	3000	1000	6000	4000	2000
2012	6000	3000	3000	7000	4000	3000	8000	5000	3000
2013	8000	5000	3000	8000	4000	4000	5000	2000	3000
2014	7000	4000	3000	6000	3000	3000	9000	4000	5000
2015	5000	3000	2000	10000	6000	4000	12000	7000	5000

46. Answer: A)

Average number of student enrolled form all the state Z from all the year together = (4000+6000+8000+5000+9000+12000) /5 = 8000

47. Answer: D)

Female student enrolled in year 2012 from state X and Y = 3000+3000=6000

Male student enrolled in year 2013 form state Y and Z together = 4000+2000 =6000

Required % = 6000/6000 *100 = 100%

48. Answer: D)

Ratio of total male student enrolled in 2013 and 2014 form all the state to female student enrolled in 2014 and 2015 from all the state

= (5000+4000+4000+3000+2000+4000): (3000+2000+3000+4000+5000+5000)

= 22000:22000

= 1:1

49. Answer: A)

Total student enrolled in 2013, 2014 and 2015 from Y = 8000+6000+10000 = 24000

The total student enrolled form State X from all the year = 3000+5000+6000+8000+7000+5000 = 34000

Required difference = 34000 -24000 = 10000

50. Answer: D)

Male student enrolled from State Y from all the year together = 3000+3000+4000+4000+3000+6000=23000

Female student enrolled from the state of X from all the year together = 2000+3000+3000+3000+3000+2000 = 16000

Required % = 23000/16000 *100 = 143.75%

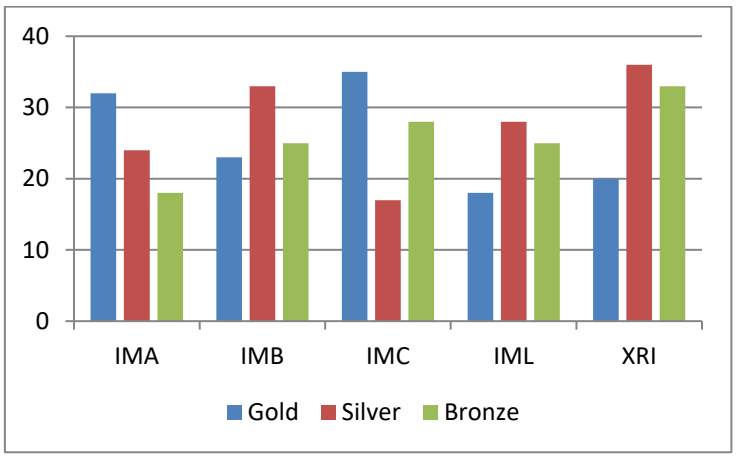
Data Interpretation Practice Questions PDF Download

Expected Bar Graph DI for Upcoming Bank Prelims Exam

BAR GRAPH

Directions (1 – 5): Answer the questions based on the information given below.

The graph below shows the number of different medals won by 5 different colleges in an inter college sports meet.



1. What is the total number of gold medals won by these 5 colleges together?

a) 124

b) 132

c) 114

d) 128

e) 108

2. What is the total number of medals won by the college IMC?

a) 75

b) 80

c) 85

d) 78

e) 83

3. The number of silver medals won by IML, is what percentage higher than the number of bronze medals won by IMA?

a) 44.44%

b) 25.55%

c) 55.55%

d) 28.45%

e) 11.11%

4. The number of silver medals won by IMB and XRI together, is what percentage of the total silver medals won by all these 5 colleges?

a) 25%

b) 50%

c) 62%

d) 37%

e) 75%

5. Which college won the least number of medals amongst the given five colleges?

a) IMA

b) IMB

c) IMC

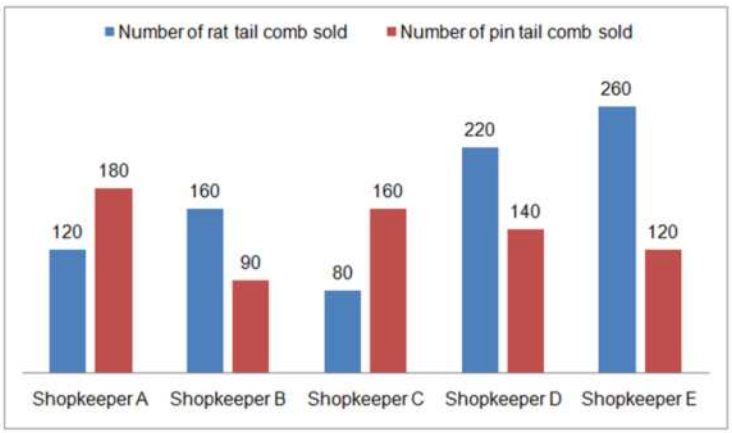
d) IML

e) XRI

Directions (6 – 10): Answer the questions based on the information given below.

The bar graph represents the number of rat tail comb and pin tail comb sold by five different shopkeepers.

Number of combs sold by a shopkeeper = Number of (rat tail comb + pin tail comb) sold by a shopkeeper.



6. Find the difference between the number ofcombs sold by shopkeeper A and that by shopkeeper B.

a) 80

b) 40

c) 50

d) 70

e) 60

7. Find the ratio of the number of comb sold by shopkeeper D to that by shopkeeper E.

a) 14:17

b) 21:23

c) 8:11

d) 18:19

e) 5:9

8. Number of rat tail comb sold by shopkeeper C is what percent of the number of pin tail comb sold by the same shopkeeper?

a) 50%

b) 40%

c) 60%

d) 30%

e) 45%

9. Find the average of the number of pin tail comb sold by each shopkeeper.

a) 133

b) 156

c) 142

d) 138

e) None of these

10. If the price of each rat tail comb and pin tail comb is Rs. 8 and Rs. 13 respectively then find the revenue generated by shopkeeper B.

a) Rs. 1820

b) Rs. 2450

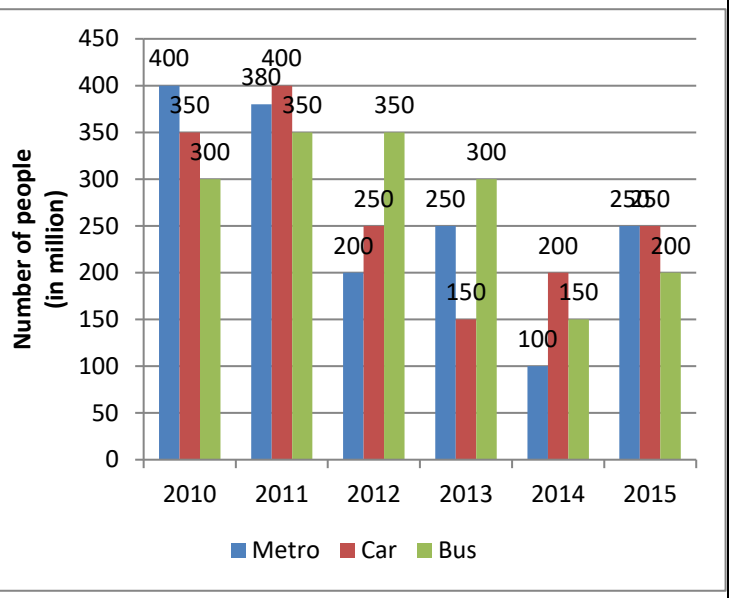
c) Rs. 2260

d) Rs. 1980

e) Rs. 2340

Directions (11 – 15): Study the following graph carefully and answer the question given below:

The graph shows the people in millions using different types of travel to office over the year.



11. In the year 2012, if all the buses reduced their rates by 40% and 40% of people who preferred to travel by metro, now started preferring bus, then how many millions of the people preferred to travel by bus now?

a) 400

b) 410

c) 420

d) 430

e) 440

12. Find the ratio of the number of people preferring to travel by car to the number of people preferring to travel by metro in the year 2014?

a) 3 : 2

b) 2 : 1

c) 4 : 9

d) 7 : 9

e) 5 : 7

13. In 2013, the people preferring to travel by car represented what percent of the people preferring to travel by cars, metro and bus together in that year?

a) 16.25%

b) 21.42%

c) 14.25%

d) 15.35%

e) 25.75%

14. The number of people preferring to travel by metro in 2015 was how many millions less than the number of people preferring to travel by metro in 2010?

a) 50

b) 100

c) 120

d) 150

e) 136

15. During 2010 to 2015, the total number of people who prefer travelling by metro, were how many millions?

a) 1280

b) 1580

c) 1108

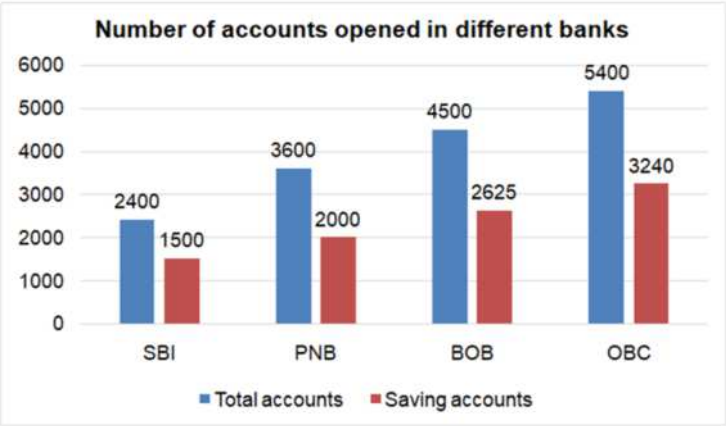
d) 1008

e) None of these

Directions (16 – 20): Answer the questions based on the information given below.

The given bar graph shows the number of accounts opened in different banks in Bijnor district in 2016.

Note: Total accounts = Savings accounts + Current accounts



16. Which of the following given bank has highest ratio of Savings account to Current accounts?

a) SBI

b) PNB

c) BOB

d) OBC

e) Both SBI and OBC

17. Average of number of savings accounts opened in SBI and PNB taken together is how much more/less than number of current accounts opened in BOB?

a) 100

b) 125

c) 150

d) 175

e) None of these

18. Find the ratio of total number of current accounts opened in SBI and PNB taken together to the total account opened in BOB.

a) 3:4

b) 3:5

c) 5:7

d) 5:9

e) 7:12

19. If Rs. 40 and Rs. 60, respectively, are submitted in each saving and current accounts opened in BOB, then find the total revenue (in Rs.) generated by BOB.

a) Rs. 122500

b) Rs. 175000

c) Rs. 217500

d) Rs. 245000

e) None of these

20. Number of savings accounts opened in OBC is what percentage more or less than the number of current accounts opened in BOB?

a) 86.4%

b) 72.8%

c) 56.5%

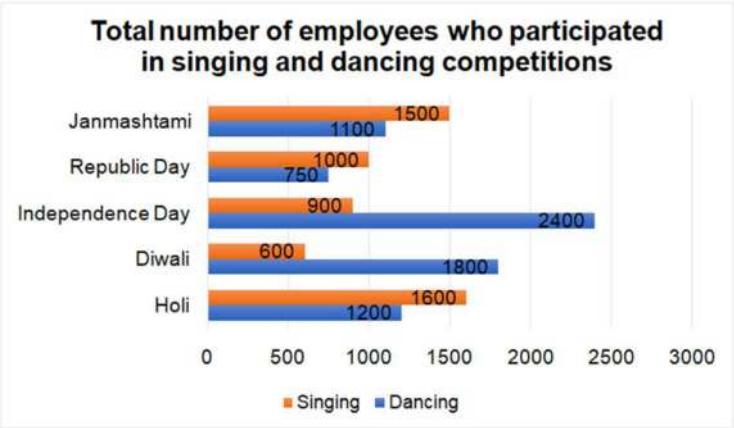
d) 45.4%

e) 36.2%

Expected Bar Graph DI for Upcoming Bank Prelims Exam

Directions (21 – 25): Answer the questions based on the information given below.

The bar graph given below shows the total number of employees who participated in dancing and singing competitions held in an office on five different occasions (Holi, Diwali, Independence Day, Republic Day and Janmashtami)



21. Number of employees participating in dancing on Diwali is how much percent more than the number of employees participating in singing on Holi?

a) 12.5%

b) 12%

c) 15%

d) 25%

e) 32%

22. What is the difference between the average number of employees participating in dancing on Diwali, Independence Day and Republic day and the average number of employees participating in singing on Holi, Independence Day, Republic Day and Janmashtami?

a) 500

b) 400

c) 450

d) 550

e) 600

23. Out of total employees participating in dancing on Republic day, 50% are male and out of them, the ratio of married male to unmarried male employees is 2:1, respectively. Find the number of unmarried male employees participating in dancing on Republic day.

a) 150

b) 250

c) 125

d) 225

e) 280

24. What is the ratio of the total number of employees participating in dancing to the total number of employees participating in singing?

a) 19:17

b) 117:119

c) 5:6

d) 145:112

e) 112:145

25. On DurgaPooja, the number of employees participating in dancing is 63% more than the number of employees participating in dancing on Independence Day and number of employees participating in singing is 36% less than number of employees participating in singing on Janmashtami. Calculate the average number of participants per event on DurgaPooja.

a) 2564

b) 4872

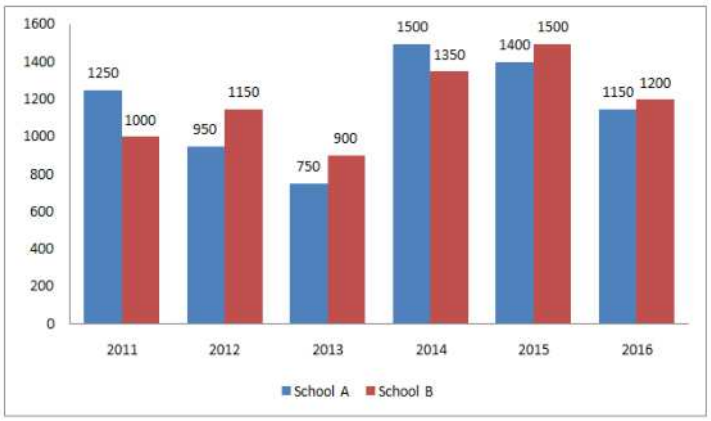
c) 960

d) 3912

e) 2436

Directions (26 – 30): Study the following information carefully and answer the given questions.

The following bar graph shows the total number of students appearing for final examination from 2 different schools in different years.



26. Total number of students appeared for final examination from School A in the year 2011 and 2015 together is what percentage of total number of students appeared for final examination from School B in the year 2012 and 2014 together?

a) 75 %

b) 92 %

c) 106 %

d) 124 %

e) None of these

27. Find the difference between the total number of students appeared for final examination from School A to that of School B in all the given years?

a) 100

b) 150

c) 50

d) 200

e) None of these

28. If the percentage of total number of students passed in School A and B in 2016 is 82 % and 91 % respectively, then ratio between the total number of students appeared for final examination from both the schools in 2016 to that of total number of students passed from both the schools in 2016?

a) 157 : 189

b) 28 : 45

c) 11 : 5

d) 470 : 407

e) None of these

29. If the ratio of total number of male to that of female students appeared for final examination from School A in 2011 and 2013 is 13 : 12 and 7 : 8 respectively, then find the average number of female students appeared for final examination from School A in 2011 and 2013?

a) 650

b) 500

c) 525

d) 675

e) None of these

30. Find the average number of students appeared from School A and B together in the year 2012, 2013 and 2014?

a) 2200

b) 2100

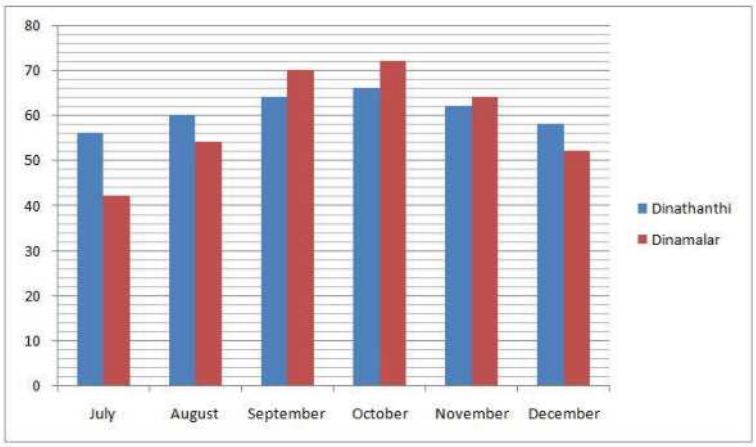
c) 2050

d) 2250

e) None of these

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

The following bar graph shows the total number of Dinathanthi and Dinamalar readers (In thousands) in 6 different months of a certain state in the year 2018.



31. If the total number of Dinathanthi readers in the month of January 2019 is average of Dinathanthi readers in all the given months together in the year 2018 and the total number of Dinamalar readers in the month of January 2019 is 6000 less than the total number of Dinathanthi readers in January 2019, then find the difference between the total number of Dinamalar readers in October 2018 to that of total number of Dinamalar readers in January 2019?

a) 21000

b) 17000

c) 15000

d) 23000

e) None of these

32. Find the average number of Dinamalar readers in all the given months together in the year 2018?

a) 61000

b) 55000

c) 57000

d) 59000

e) None of these

33. Find the ratio between the total number of Dinathanthi readers in the month of July, September and November together to that of total number of Dinamalar readers in the month of August, October and December together?

a) 91 : 89

b) 25 : 17

c) 49 : 32

d) 115 : 92

e) None of these

34. Total number of Dinathanthi and Dinamalar readers in the month of July is approximately what percentage of total number of Dinathanthi and Dinamalar readers in the month of September?

a) 62 %

b) 50 %

c) 73 %

d) 85 %

e) 38 %

35. Find the difference between the average number of Dinathanthi readers to that of Dinamalar readers in all the given months together?

a) 4000

b) 2000

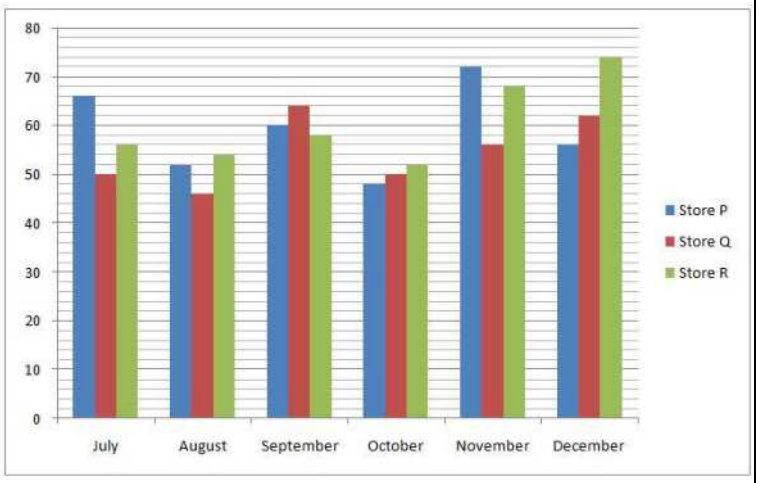
c) 3000

d) 5000

e) None of these

Directions (36 – 40): Study the following information carefully and answer the given questions:

The following bar graph shows the total number of pizzas (In hundreds) sold by 3 different stores in 6 different months in the year 2018.



36. Find the ratio between the total number of pizzas sold by all the given stores in the month of July to that of November?

a) 27 : 34

b) 43 : 49

c) 32 : 37

d) 61 : 75

e) None of these

37. Find the total number of pizzas sold in the month of January 2019 and August 2018 together, if the total pizzas sold by store P, Q and R in January 2019 is 20 %, 25 % and 10 % more than the total number of pizzas sold by store P, Q and R in December 2018?

a) 35620

b) 33750

c) 38560

d) 41240

e) None of these

38. Find the average number of pizzas sold by store P in all the given months together?

a) 5900

b) 5650

c) 6100

d) 6250

e) None of these

39. Find the difference between thetotalnumber of pizzas sold by store Q to that of store R in all the given months together?

a) 3600

b) 4200

c) 4000

d) 3400

e) None of these

40. Total number of pizzas sold by all the given stores in the month of September is approximately what percentage more/less than the total number of pizzas sold by all the given stores in the month of October?

a) 33 % less

b) 33 % more

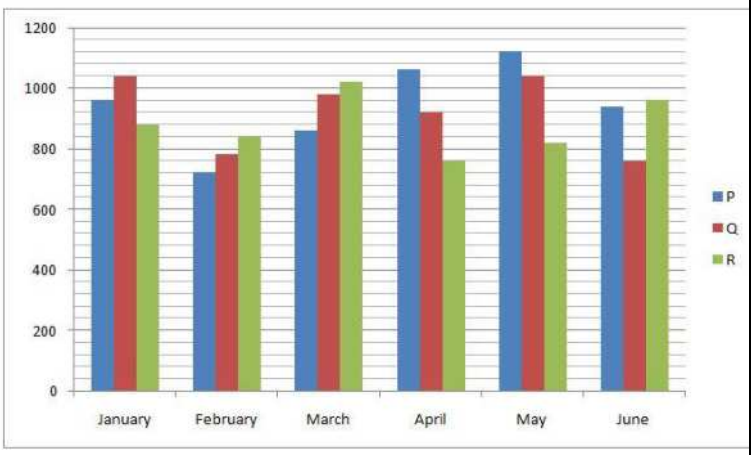
c) 21 % more

d) 21 % less

e) 12 % more

Directions (41 – 45): Study the following information carefully and answer the given questions.

The following bar graph shows the total distance (In Km) travelled by 3 different persons in 5 different months.



41. Find the ratio between the total distance travelled by P in the month of January, March and May together to that of total distance travelled by R in the month of February, April and June together?

a) 143: 144

b) 147: 128

c) 141: 128

d) 128: 141

e) None of these

42. Find the difference between the total distance travelled by Q in the month of January and February together to that of total distance travelled by the same person in the month of May and June together?

a) 60 km

b) 40 km

c) 80 km

d) 20 km

e) None of these

43. Total distance travelled by all the 3 persons in the month of February is approximately what percentage more/less than the total distance travelled by all the 3 persons in the month of April?

a) 25 % more

b) 25 % less

c) 15 % less

d) 15 % more

e) 40 % more

44. Find the average distance travelled by person Q in all the given months together?

a) 920 km

b) 1050 km

c) 1180 km

d) 1370 km

e) None of these

45. Total distance travelled by person P and Q together in the month of March is approximately what percentage of total distance travelled by person Q and R together in the month of May?

a) 85 %

b) 70 %

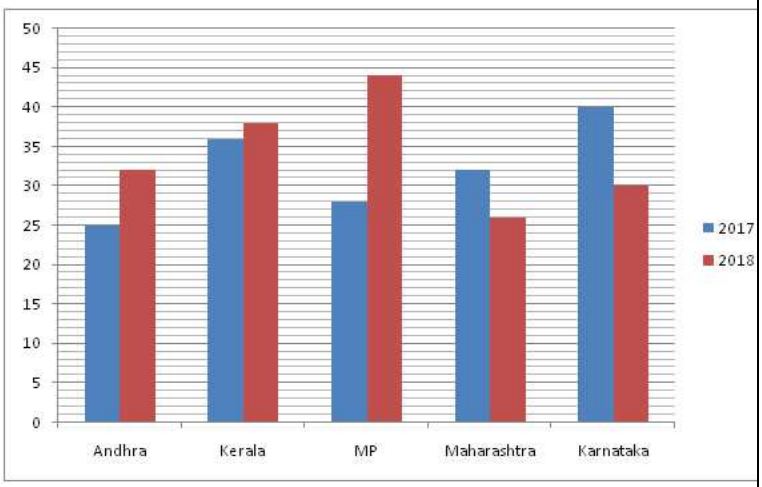
c) 120 %

d) 135 %

e) 100 %

Directions (46 – 50): Study the following information carefully and answer the given questions?

The following bar graph shows the total number of fortune magazine readers (In thousands)in the year 2017 and 2018 in 5 different states.



46. Find the ratio between the total number of fortune magazine readers of Kerala and MP in the year 2017 to that of the total number of fortune magazine readers of Maharashtra and Karnataka in the year 2018?

a) 8 : 7

b) 11 : 9

c) 13 : 10

d) 25 : 22

e) None of these

47. Find the difference between the total number of fortune magazine readers of Andhra to that of Maharashtra in both the years together?

a) 3000

b) 5000

c) 2000

d) 1000

e) None of these

48. Find the average number of fortune magazine readers of all the given states in the year 2018?

a) 32000

b) 34000

c) 33000

d) 35000

e) None of these

49. Total number of fortune magazine readers of Andhra and Karnataka in the year 2018 is approximately what percentage of total number of fortune magazine readers of Kerala and Maharashtra in the year 2017?

a) 103 %

b) 78 %

c) 66 %

d) 117 %

e) 91 %

50. The total number of fortune magazine readers of Kerala in both the years together is approximately what percentage more/less than the total number of fortune magazine readers of MP in both the years together?

a) 15 % more

b) 15 % less

c) 3 % more

d) 27 % more

e) 3 % less

EXPLANATION AND ANSWER

1. Answer: D)

Total gold medals won by these 5 colleges together = 32 + 23 + 35 + 18 + 20 = 128.

2. Answer: B)

The total number of medals won by the college IMC = (35+17+28) = 80.

3. Answer: C)

Number of silver medals won by IML = 28

Number of bronze medals won by IMA = 18

Difference = 10

Thus, the required percentage = 10/18 x 100 = 55.55%

4. Answer: B)

Number of silver medals won by IMB and XRI together = 33 + 36 = 69

Total number of silver medals won by these 5 colleges together = 138

Thus, the required percentage = 69/138 x 100 = 50%.

5. Answer: D)

Medal won by

IMA = 74

IMB = 81

IMC = 80

IML = 71

XRI = 89

Thus, we can see that IML won the least number of medals amongst the given five colleges.

6. Answer: C)

Number of comb sold by shopkeeper A = 120 + 180 = 300

Number of comb sold by shopkeeper B = 160 + 90 = 250

Required difference = 300 – 250 = 50

7. Answer: D)

Number of comb sold by shopkeeper D = 220 + 140 = 360

Number of comb sold by shopkeeper E = 260 + 120 = 380

Required ratio = 360:380 = 18:19

8. Answer: A)

Required percentage = 80/160 × 100 = 50%

9. Answer: D)

Required average = (180 + 90 + 160 + 140 + 120)/5 = 138

10. Answer: B)

Revenue generated by shopkeeper B = 160 × 8 + 90 × 13 = 1280 + 1170 = Rs. 2450

11. Answer: D)

We can see from the graph that in the year 2012,

Number of people traveling by metro = 200 million

Number of people traveling by bus = 350 million

Since, 40% of people travelling by metro shifted to bus

Now people travelling by bus = 350 + (40×200)/100 = 350 + 80 = 430 million

12. Answer: B)

Number of people preferring to travel by car in 2014 = 200 million

Number of people preferring to travel by metro in 2014 = 100 million

∴ Required ratio = 200 : 100 = 2 : 1

13. Answer: B)

Total number of people travelling by car, metro and bus in 2013

= 150 + 250 + 300 = 700 millions

Number of people travelling by cars = 150 millions

∴Required percentage = 150/700 × 100 = 21.42%

14. Answer: D)

Number of people travelling by metro in 2015 = 250 millions

Number of people travel by metro in 2010 = 400 millions

Required difference = 400 - 250 = 150 millions

15. Answer: B)

Number of people travelling by metro in 2010 = 400 millions

Number of people travelling by metro in 2011 = 380 millions

Number of people travelling by metro in 2012 = 200 millions

Number of people travelling by metro in 2013 = 250 millions

Number of people travelling by metro in 2014 = 100 millions

Number of people travelling by metro in 2015 = 250 millions

Total number of people travelling by metro = (400 + 380 + 200 + 250 + 100 + 250) million = 1580 millions

(16 – 20): Common Explanation:

Year	Total Accounts	Savings accounts	Current accounts	Ratio of Savings account to Current accounts
SBI	2400	1500	2400 – 1500 = 900	5:3
PNB	3600	2000	3600 – 2000 = 1600	5:4
BOB	4500	2625	4500 – 2625 = 1875	7:5
OBC	5400	3240	5400 – 3240 = 2160	3:2

16. Answer: A)

17. Answer: B)

Average of number of savings accounts opened in SBI and PNB taken together = (1500 + 2000)/2 = 1750

Therefore, required difference = 1875 – 1750 = 125

18. Answer: D)

Required ratio = (900 + 1600): 4500 = 2500: 4500 = 5: 9

19. Answer: C)

Therefore, required revenue = 2625 × 40 + 1875 × 60 = 105000 + 112500 = Rs. 217500

20. Answer: B)

Therefore, required percentage = [(3240 – 1875)/1875] × 100 = 72.8%

21. Answer: A)

Required percentage = [(1800 - 1600)/1600] × 100 = 1/8 = 12.5%

22. Answer: B)

Average number of employees participating in dancing on Diwali, Independence Day and Republic day = (1800 + 2400 + 750)/3 = 4950/3 = 1650

Average number of employees participating in singing on Holi, Independence Day, Republic Day and Janmashtami = (1600 + 900 + 1000 + 1500)/4 = 5000/4 = 1250

Required difference = 1650 – 1250 = 400

23. Answer: C)

Number of male employees participating in dancing on Republic Day = 0.5 × 750 = 375

Number of unmarried male employees participating in dancing on Republic day = (1/3) × 375 = 125

24. Answer: D)

Total number of employees participating in dancing = 7250

Total number of employees participating in singing = 5600

Required ratio = 7250:5600 = 145:112

25. Answer: E)

Number of employees participating in dancing on DurgaPooja = 1.63 × 2400 = 3912

Number of employees participating in singing on DurgaPooja = 0.64 × 1500 = 960

Required average = (3912 + 960)/2 = 2436

26. Answer: c)

Total number of students appeared for final examination from School A in the year 2011 and 2015 together

= > 1250 + 1400 = 2650

Total number of students appeared for final examination from School B in the year 2012 and 2014 together

= > 1150 + 1350 = 2500

Required % = (2650/2500)*100 = 106 %

27. Answer: a)

The total number of students appeared for final examination from School A in all the given years

= > 1250 + 950 + 750 + 1500 + 1400 + 1150 = 7000

The total number of students appeared for final examination from School B in all the given years

= > 1000 + 1150 + 900 + 1350 + 1500 + 1200 = 7100

Required difference = 7100 – 7000 = 100

28. Answer: d)

The total number of students appeared for final examination from both the schools in 2016

= > 1150 + 1200 = 2350

The total number of students passed from both the schools in 2016

= > 1150*(82/100) + 1200*(91/100)

= > 943 + 1092 = 2035

Required ratio = 2350 : 2035 = 470 : 407

29. Answer: b)

The ratio of total number of male to that of female students appeared for final examination from School A in 2011 = 13 : 12

The total number of female students appeared for final examination from School A in 2011

= > 1250*(12/25) = 600

The ratio of total number of male to that of female students appeared for final examination from School A in 2013 = 7 : 8

The total number of female students appeared for final examination from School A in 2013

= > 750*(8/15) = 400

The average number of female students appeared for final examination from School A in 2011 and 2013

= > (600 + 400)/2 = 1000/2 = 500

30. Answer: a)

The average number of students appeared from School A and B together in the year 2012, 2013 and 2014

= > (950 + 1150 + 750 + 900 + 1500 + 1350)/3

= > 6600/3

= > 2200

31. Answer: b)

The total number of Dinathanthi readers in the month of January 2019

= >(56000 + 60000 + 64000 + 66000 + 62000 + 58000)/6

= > 61000

The total number of Dinamalar readers in the month of January 2019

= >61000 – 6000 = 55000

The total number of Dinamalar readers in October 2018

= >72000

Required difference = 72000 – 55000 = 17000

32. Answer: d)

The average number of Dinamalar readers in all the given months together in the year 2018

= >(42000 + 54000 + 70000 + 72000 + 64000 + 52000)/6

= > 59000

33. Answer: a)

The total number of Dinathanthi readers in the month of July, September and November together

= >56000 + 64000 + 62000 = 182000

The total number of Dinamalar readers in the month of August, October and December together

= >54000 + 72000 + 52000 = 178000

Required ratio = 182000 : 178000 = 91 : 89

34. Answer: c)

Total number of Dinathanthi and Dinamalar readers in the month of July

= >56000 + 42000 = 98000

Total number of Dinathanthi and Dinamalar readers in the month of September

= >64000 + 70000 = 134000

Required % = (98000/134000)*100 = 73.13 % = 73 %

35. Answer: b)

The average number of Dinathanthi readers in all the given months together

= >(56000 + 60000 + 64000 + 66000 + 62000 + 58000)/6

= > 61000

The average number of Dinamalar readers in all the given months together

= >(42000 + 54000 + 70000 + 72000 + 64000 + 52000)/6

= > 59000

Required difference = 61000 – 59000 = 2000

36. Answer: b)

The total number of pizzas sold by all the given stores in the month of July

= >6600 + 5000 + 5600 = 17200

The total number of pizzas sold by all the given stores in the month of November

= >7200 + 5600 + 6800 = 19600

Required ratio = 17200 : 19600 = 43 : 49

37. Answer: e)

The total number of pizzas sold in the month of January 2019 and August 2018 together

= >5600*(120/100) + 6200*(125/100) + 7400*(110/100) + 5200 + 4600 + 5400

= >6720 + 7750 + 8140 + 5200 + 4600 + 5400

= > 37810

38. Answer: a)

The average number of pizzas sold by store P in all the given months together

= >(6600 + 5200 + 6000 + 4800 + 7200 + 5600)/6

= > 35400/6 = 5900

39. Answer: d)

The total number of pizzas sold by store Q in all the given months together

= >5000 + 4600 + 6400 + 5000 + 5600 + 6200

= > 32800

The total number of pizzas sold by store R in all the given months together

= >5600 + 5400 + 5800 + 5200 + 6800 + 7400

= > 36200

Required difference = 36200 – 32800 = 3400

40. Answer: c)

Total number of pizzas sold by all the given stores in the month of September

= >6000 + 6400 + 5800 = 18200

Total number of pizzas sold by all the given stores in the month of October

= >4800 + 5000 + 5200 = 15000

Required % =[(18200 – 15000)/15000]*100 = 21.33 % = 21 % more

41. Answer: b)

The total distance travelled by P in the month of January, March and May together

= > 960 + 860 + 1120 = 2940 km

The total distance travelled by R in the month of February, April and June together

= > 840 + 760 + 960 = 2560 km

Required ratio = 2940 : 2560 = 147: 128

42. Answer: d)

The total distance travelled by Q in the month of January and February together

= > 1040 + 780 = 1820 km

The total distance travelled by the same person in the month of May and June together

= > 1040 + 760 = 1800 km

Required difference = 1820 – 1800 = 20 km

43. Answer: c)

Total distance travelled by all the 3 persons in the month of February

= > 720 + 780 + 840 = 2340 km

Total distance travelled by all the 3 persons in the month of April

= > 1060 + 920 + 760 = 2740 km

Required % = [(2740 – 2340) / 2740] * 100 = 15 % less

44. Answer: a)

The average distance travelled by person Q in all the given months together

= > (1040 + 780 + 980 + 920 + 1040 + 760) / 6

= > 5520/6 = 920 km

45. Answer: e)

The total distance travelled by person P and Q together in the month of March

= > 860 + 980 = 1840 km

The total distance travelled by person Q and R together in the month of May

= > 1040 + 820 = 1860 km

Required % = (1840 / 1860) * 100 = 98.92 % = 100 %

46. Answer: a)

The total number of fortune magazine readers of Kerala and MP in the year 2017

= >36000 + 28000 = 64000

The total number of fortune magazine readers of Maharashtra and Karnataka in the year 2018

= >26000 + 30000 = 56000

Required ratio = 64000 : 56000 = 8 : 7

47. Answer: d)

The total number of fortune magazine readers of Andhra in both the years together

= >25000 + 32000 = 57000

The total number of fortune magazine readers of Maharashtra in both the years together

= >32000 + 26000 = 58000

Required difference = 58000 – 57000 = 1000

48. Answer: b)

The average number of fortune magazine readers of all the given states in the year 2018

= >(32000 + 38000 + 44000 + 26000 + 30000) / 5

= > 170000/5 = 34000

49. Answer: e)

Total number of fortune magazine readers of Andhra and Karnataka in the year 2018

= >32000 + 30000 = 62000

Total number of fortune magazine readers of Kerala and Maharashtra in the year 2017

= >36000 + 32000 = 68000

Required % = (62000 / 68000) * 100 = 91.17 % = 91 %

50. Answer: c)

The total number of fortune magazine readers of Kerala in both the years together

= >36000 + 38000 = 74000

The total number of fortune magazine readers of MP in both the years together

= >28000 + 44000 = 72000

Required % = [(74000 – 72000) / 72000] * 100 = 2.77 % = 3 % | more

CODED DIRECTION WITH DISTANCE

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

X * Y means X is to the left of Y at a distance of 7m.

X # Y means X is to the south direction of Y at a distance of 5m.

X @ Y means X is to the right of Y at a distance of 3m.

X % Y means X is to the north direction of Y at a distance of 9m.

In each of the following questions initially, all persons are facing north.

1). B @ D % V # H @ K, then in which direction is K with respect to D?

a) North
b) East
c) South-west
d) North-West
e) None of these

2). M % N, Q * M, N % G, L * Q then find the minimum distance between Q and N (approx)?

a) $\sqrt{}$ 12 m
b) $\sqrt{}$ 130 m
c) $\sqrt{}$ 81 m
d) $\sqrt{}$ 49 m
e) $\sqrt{}$ 100 m

3). S @ T * R % M * U, then T is in which direction with respect to U?

a) South

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

4). E # F * H %G * I then find the distance between E and H?

a) √72 m
b) 9 m
c) 3√2 m
d) √74 m
e) None of these

5). R#M @ N * O % P # Q, then Q in which direction with respect to R?

a) South
b) North-West
c) West
d) North-East
e) East

Direction (6-10): In certain coding language, the directions are coded as per below conditions.

J@K means – J is North of K

J%K means – J is South of K

J#K means – J is East of K

J $ K means – J is West of K

J@#K means- J is North East K

The distance between two point is either 8 m or 11 m.

@ means the distance between the two points is 8m

% means the distance between the two points is either 11m.

JK > LM Means the distance between point J and K is greater than that of point L and M.

Example: J @ K means J is north of K and the distance between J and K is 8m.

A#B, C%B, D@E, F#E, D $ C, F@G, H#G

BC=GH, EF>FG,DC<AB=GH

6). In which direction A with respect to G?

a) @
b) %
c) @#
d) %$
e) None of these

7). What is the shortest distance between Point D and Point F?

a) √100 m
b) √64 m
c) √121 m
d) √185m
e) None of these

8). Akshay travels from point D to F and F to H.Then what is the shortest distance he travelled through this journey?

a) √370m
b) √121 m
c) √185 m
d) either a or b

e) None of these

9). If I is 11m east of D then I is in which direction of F?

a) North
b) East
c) North-west
d) North-East
e) None of these

10). which of following statement is true?

a) D@C
b) A%$ G
c) C@$G
d) H$C
e) None of these

Direction (11-14): Read the following information carefully to answer the questions that follow. The questions are based on following coding formats:

– North

@ – South

% – East

$ – West

! – 4m

& – 3m

Examples: A@B means A is South of B, A#$B means A is North-West of B, A@$!B means A is South-West of B at a distance of 4m .

Conditions given are as:

I. P#!Q

II. P#$R

III. R%&Q

IV. R@!S

V. U%&R

VI. U#!W

VII. W@$&X

11). W is in which direction with respect to R.

a) #%
b) #$
c) @$
d) @%
e) None of these

12). If W%&Z then distance between Z and S is?

a) 6m
b) 8m
c) 4m
d) 5m
e) 9m

13). P is in with direction with respect to W and what is the distance between P and W is?

a) North-East(10m)
b) North-East(8m)
c) South-East(6m)
d) North-West(10m)
e) None of these

14). If Y#&U then Y is in with direction with respect to S ?

a) North-East
b) North-East
c) South-East
d) North-West
e) Data inadequate

Direction(15-18): Read the following information carefully to answer the questions that follow. The questions are based on following coding formats:

&5 – North(10m)

@3 – South(6m)

* 4– East(8m)

% 2– West(4m)

Examples: A@3B means A is 6m South of B.

A&%6B means A is 12m North-West of B.

A@*4B means A is 8m South-West of B.

Conditions given are as:

I. S%6V

II. V@%2K

III. R@3V

IV. B&%5T

V. R@%Y

VI. T*4K

VII. V%1Y

15). B is in which direction with respect to V.

a) @%
b) &%
c) &*
d) @%
e) None of these

16). R is in which direction of T ? distance between Y and R is?

a) North-East 6m
b) South-West √40m
c) South East √4m
d) East-√40m
e) West-√36m

17) Y is in with direction with respect to S and what is the distance between S and Y is?

a) East(14m)
b) West(12m)
c) East(12m)
d) West(10m)
e) None of these

18). Which of the following pair is incorrect?

a) V is South-west of K
b) T is South-east of B
c) S is West of Y
d) T is East of R
e) None of these

Direction (19-22): Read the following information carefully and answer the given questions.

X$Y - Y is in the south direction of X at distance of 9m.
X!Y - Y is in the north direction of X at distance of 6m
X&Y - Y is in the east direction of X at distance of 13m
X^Y - Y is in the west direction of X at distance of 11m.
X!^Y- Y is in the northwest direction of X.
X$&Y- Y is in the southeast direction of X.

A$^C, C!B, B&D!E, A^B

19). A is in which direction with respect to D and what is distance between point A and point D?

a) West and 2m
b) East and 9m
c) North and 11m
d) South and 13m
e) None of these

20).What is the distance between E and B?

a) √215 m
b) √85 m
c) √205 m
d) √145 m
e) None of these

21). E is in which direction with respect to A and what is distance between point A and point E?

a) North, √40 m
b) North-west, √40 m
c) West, √40 m
d) North-east, √40 m
e) None of these

22). C is in which direction with respect to E?

a) North
b) South-west
c) East
d) North-east
e) None of these

Direction (23-25): Read the following information carefully and answer the questions given below it:

Study the following information carefully and answer the questions given below.

P%R (10)- P is 12m in south of R

P$R (15)- P is 17m in north of R

P#R (22)- P is 24m in west of R

P&R (14)- P is 16m in east of R

P%Q (22), P#S (5), Q&U(15), U$W (28), Y&P (15)

23). Q is in which direction with respect to Y?

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

24). What is the distance between Q and S?

a) 27
b) 22
c) 25
d) 17
e) 24

25). What is the direction of W with respect to S?

a) North
b) South-East
c) West
d) East
e) South-West

Direction (26-30): Read the following information carefully and answer the questions given below it:

Nine people – A, B, C, D, E, F, G, H and I were stood at some distance from each other in a grocery area. C was 18 m $ to that of B. A was 8 m % of that of B and H was 14 m # of that of A. G was 10 m %@ of that of H while D was 20 m # of that of G and F was 10 m % of that of G. I was situated just in the middle of B and C while E was just in the middle of G and D.

Here, % means North, # means South, $ means East and @ means West

%$ means North-East ,#@ means south-West.

For example,

X%$Y means Y is to the North-East of X

Y%$X means X is to the North-East of Y

26). What is the direction of I with respect to F?

a) South-East
b) South –west
c) North
d) North – west
e) South

27).What is the shortest distance between person B and person G?

a) 12m
b) 10m
c) 9m
d) 11m
e) None of these

28). Which of the following persons stand in the straight line?

a) G-A-B
b) C-H-I
c) G-E-D
d) A-B-H
e) Both 3 and 4

29). What is the direction of E with respect to I?

a) South
b) South – west
c) North – west
d) North
e) None of these

30). What is the difference between the sum of distance of FG+GE and BI+GB ?

a) 17
b) 03
c) 14
d) 13
e) None of these

Direction (31-35): Study the information below and answer the following questions

Y % Z – Y is north of Z.

Y # Z – Y is south of Z.

Y @ Z – Y is east of Z.

Y$ Z – Y is west of Z.

X * YZ – X is midpoint of vertical straight line YZ.

X! YZ – X is midpoint of horizontal straight line YZ.

A is 8m@B. C!AB. D is 5m%C. E is 10m@D.

F is 6m%E.G is 5m$F. H*GI.J is4m@H. G is 12m % I.

31). Amar moves from E to H, then H to G,then G to F ,what is the total distance covered by the Amar?

a) 10m
b) 12m
c) 16m
d) 18m
e) None of these

32). If there is a bus stand X at 14m west to G , then if a Akshay moves from G to X, then Akshay is standing at what distance from point B?

a) 12m
b) 6m
c) 5m
d) 11m
e) None of these

33). If Sunil moves to school Z from point F; where Z is 13m towards east from H, then at what distance from F?

a) 8m
b) 5m
c) 3m
d) 10m
e) None of these

34). In which direction is H with respect to A?

a) North
b) East
c) North-East
d) North-West
e) South West

35). If Bus travels from point I to point H and then to point D,the D to point C and again towards point B;what is total distance covered by bus?

a) 16m
b) 11m
c) 10m
d) 25m
e) None of these

Direction (36-39): Study the information below and answer the questions.

G & H (99m) – G is 77m south of H.

G % H (65m) – G is 43m east of H.

G @ H (113m) – G is 91m north of H.

G # H (66m) – G is 44m west of H.

G&# H (49m)-G is 27m South-west of H.

A @ B (25m), C # D (38m), B % C (42m), E % D (52m), G # F(64m), G & H (37m), I & E (28m), F @ I (30m) ,W@F(39m)

36). If X @G (23m) then what is distance A and X?

a) 26m
b) 42m
c) 12m
d) 16m
e) None of these

37). What is the direction of A with respect to W?

a) North
b) North-East
c) South-West
d) North-West
e) None of these

38). What is the sum of distance between E-F ,D-B and E-I?

a) 14m
b) 18m
c) 12m
d) 8m
e) None of these

39)D is in which direction to G?

a) North
b) North-East
c) South-East
d) North-West
e) None of these

Direction (40-43): Study the following information carefully and answer the questions given below:

The symbols @, © , π, $, % and # are used with the following meanings illustrated.

D$C means D is south C.(4m/6m)

D#C means D is west C.(3m/7m)

D@C means D is east C .(4m/6m)

D%C means D is north C.(3m/7m)

DπC means D is south-east C.(4m/6m)

D©C means D is south-west C.(3m/7m)

M @ L, N % M, O π N, P % O, Q @ P and R $ Q.

QR > PQ, PQ=LM, NO > PQ, NM >QR , NM=PO

40). What is the distance between N and O ?

a) 3m
b) 4m
c) 6m
d) 7m
e) None of these

41). In which direction point O is with respect to point R?

a) South
b) East
c) North-East
d) South-West
e) None of these

42). what is total distance between point N and point R?

a) 21m
b) 18m
c) 27m
d) 22m

e) 23m

Direction (43): If S is 10m to the south-East of point Q;then R is in which direction with respect to point S and what is shortest distance between point S and point R ?

a) South (12m)
b) North-West (27m)
c) South-East (36m)
d) North
e) West-(8m)

Direction (44-46): Study the following information and answer the given questions:

X>Y - Y is in the north direction of X at distance of 12m
X*Y - Y is in the east direction of X at distance of 9m
X<Y - Y is in the south direction of X at distance of 12m.
X%Y - Y is in the west direction of X at distance of 9m.
X<*Y - Y is in the southeast direction of X.
X<%Y - Y is in the southwest direction of X.
X>%Y - Y is in the northwest direction of X.
X>*Y - Y is in the northeast direction of X.

A>*B, B<*C, C<D%E, F%C, F<%D, E>A

44). What is the direction of point E with respect to F?

a) West
b) North-east
c) South-west
d) North
e) None of these

45). What is the shortest distance between C and E?

a) 16m
b) 15m
c) 17m
d) 25m
e) None of these

46). What is the difference of distance between point DA and Point AC?

a) 7m
b) 9m
c) 5m
d) 6m
e) None of these

Direction (47-50): Read the following information carefully and answer the questions that follow:

E% F means E is to the right of F at a distance of 6m.

E @ F means E is to the left of F at a distance of 7m.

E $ F means E is to the north of F at a distance of 8m.

E # F means E is to the south of F at a distance of 9m.

E * F means E is to the east of F at a distance of 10m.

E ! F means E is to the west of F at a distance of 11m.

All people are facing North direction.

47). E % F # C ! D, then D is in which direction with respect to E?

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

e) South

48). A # B % C # D, then D is in which direction with respect to A?

a) North
b) North-East
c) South
d) West
e) North-West

49). E $ F @ G # H, then H is in which direction with respect to E and what is distance between H and E?

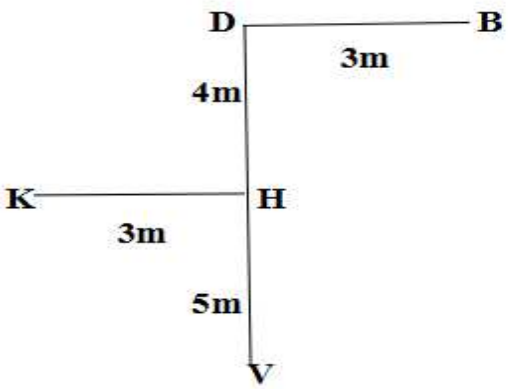
a) North, 1m
b) South, 7m
c) North-East, $\sqrt{50}$m
d) East, $\sqrt{43}$m
e) West, $\sqrt{8}$m

50). P ! R * S # Q @ T, Then T is in which direction with respect to P ?

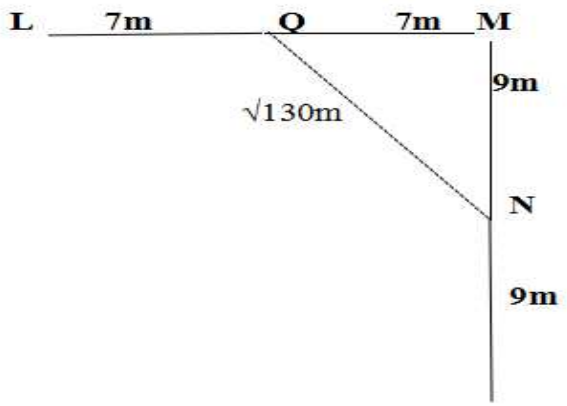
a) North
b) South-West
c) West
d) East
e) North-East

Solution and Explanation

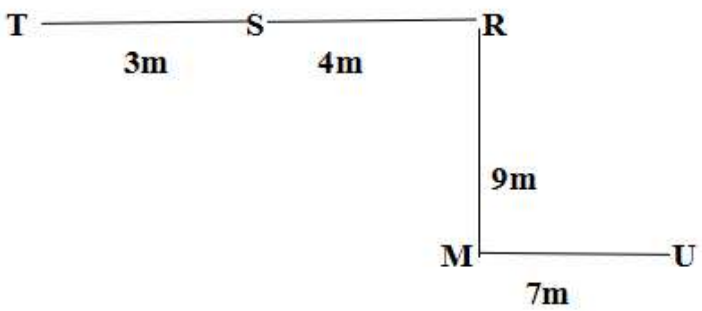
1. C



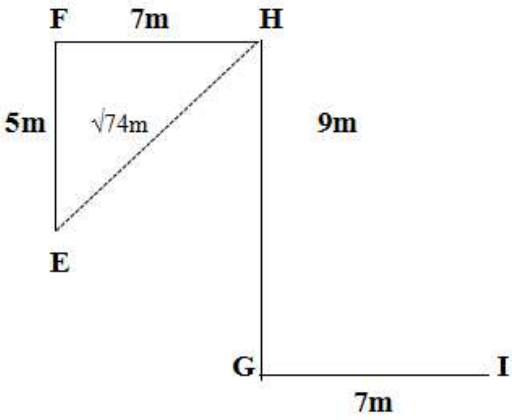
2. B



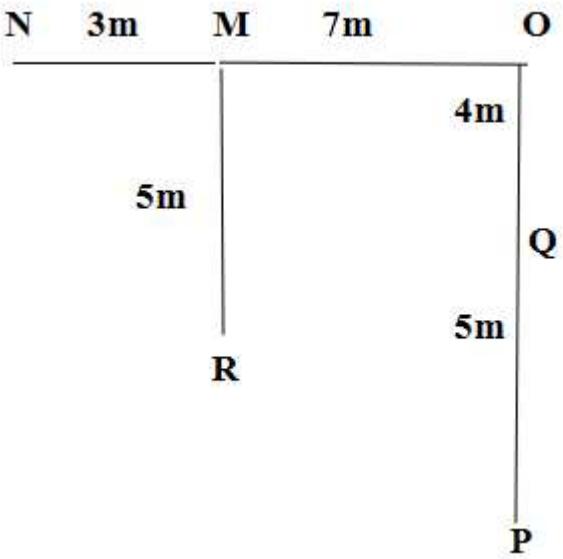
3. B



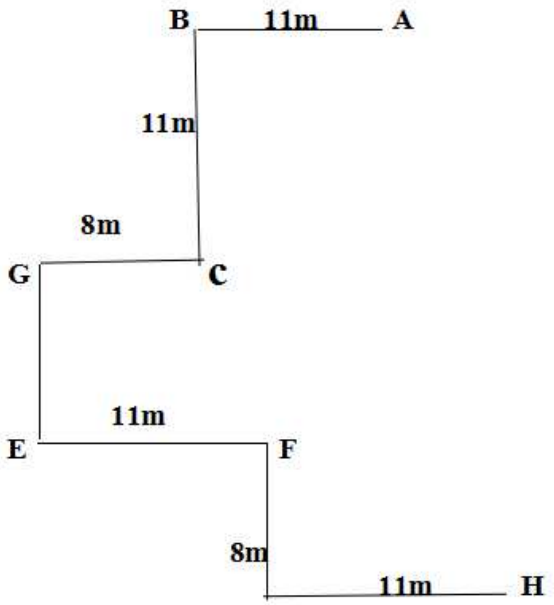
4. D



5. D



Solution (6-10):



6.C

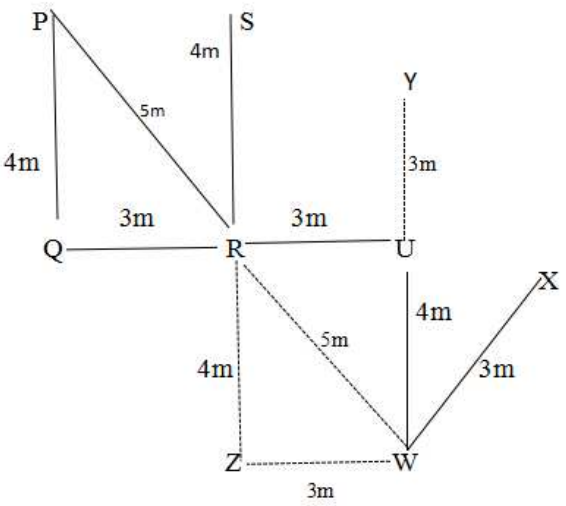
7. D

8. A

9. A

10. C

Solution (11-14):



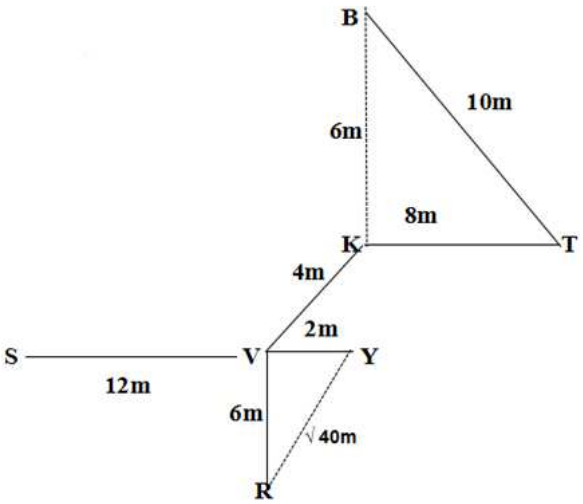
11.D

12.B

13.D

14.C

Solution(15-18):



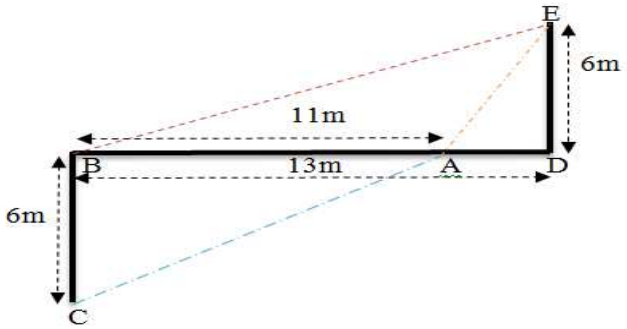
15.C

16.B

17.A

18.D

Solution(19-22):



Now, in ΔBDE by using pythagoras theorem,
$(BE)^2 = (BD)^2 + (ED)^2$
$(BE)^2 = (13)^2 + (6)^2$
$(BE)^2 = (169) + (36)$

BE = √205 m

Now, in ΔABC by using pythagoras theorem,
$(AC)^2 = (BC)^2 + (AB)^2$
$(AC)^2 = (6)^2 + (11)^2$
$(AC)^2 = (36) + (121)$

BE = √157 m

Now, in ΔADE by using pythagoras theorem,
$(AE)^2 = (AD)^2 + (ED)^2$
$(AE)^2 = (2)^2 + (6)^2$
$(AE)^2 = (4) + (36)$

AE = √40 m

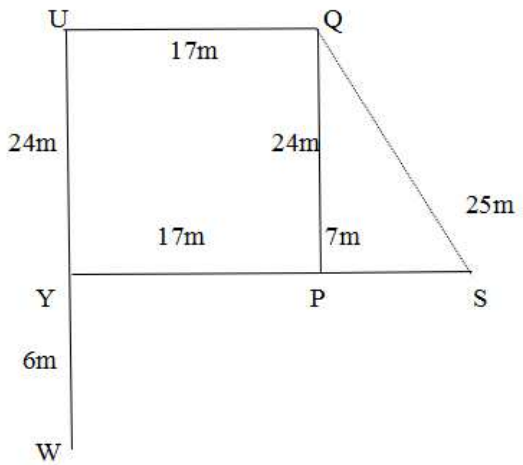
19. A

20. C

21. D

22. B

Solution(23-25):



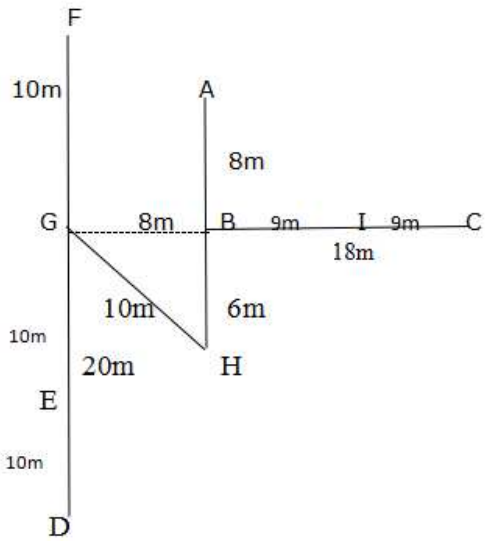
Expected Coded Direction with Distance for Upcoming Exam

23. D

24. C

25. E

Solution(26-30):



26.A

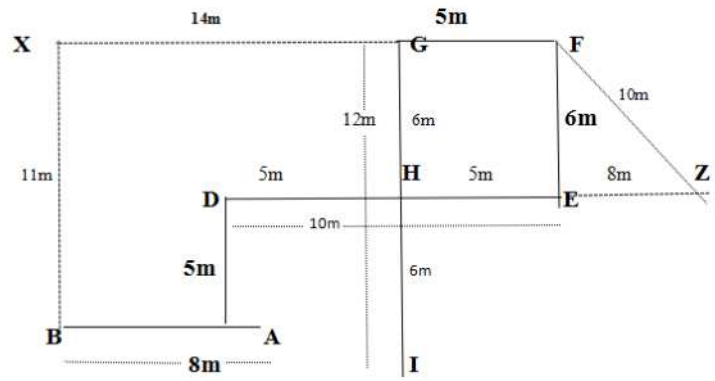
27.E

28.E

29.B

30.B

Solution(31-35):



31.C

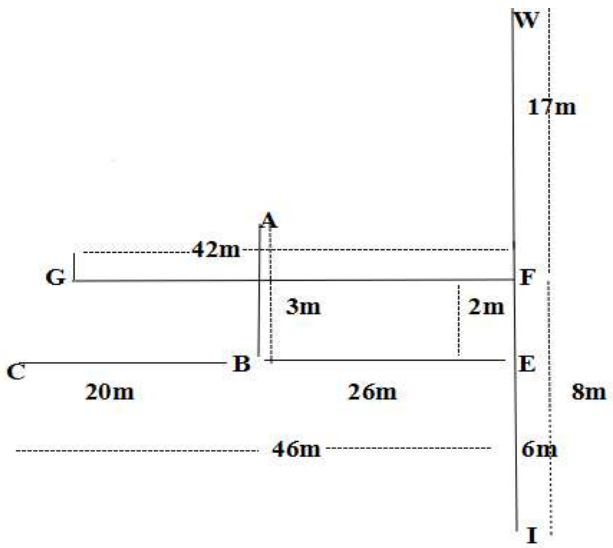
32.D

33.D

34.C

35.D

Solution(36-39):



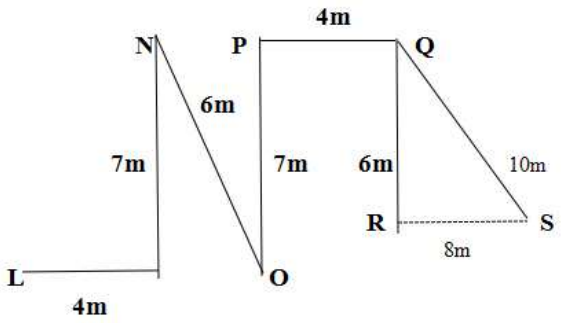
36.B

37.C

38.C

39.E

Solution(40-43):



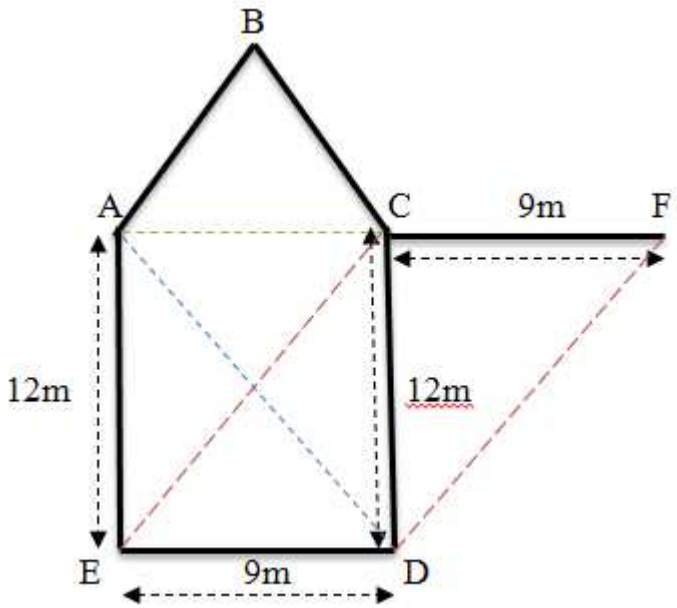
40.C

41.D

42.E

43.E

Solution(44-46):



Now, in ΔDCF by using pythagoras theorem,
$(FD)^2 = (CD)^2 + (CF)^2$
$(FD)^2 = (12)^2 + (9)^2$
$(FD)^2 = (144) + (81)$
$FD = \sqrt{225}$ m=15m

Now, in ΔCDE by using pythagoras theorem,
$(EC)^2 = (DC)^2 + (ED)^2$
$(EC)^2 = (12)^2 + (9)^2$
$(EC)^2 = (144) + (81)$
$EC = \sqrt{225}$ m=15m

Now, in ΔAED by using pythagoras theorem,
$(AD)^2 = (AE)^2 + (ED)^2$
$(AD)^2 = (12)^2 + (9)^2$
$(AD)^2 = (144) + (81)$
$AD = \sqrt{225}$ m=15m

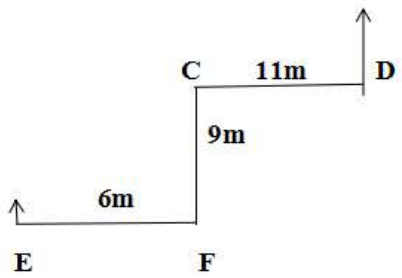
Distance between point DA and Point AC=15-9=6m

44.C

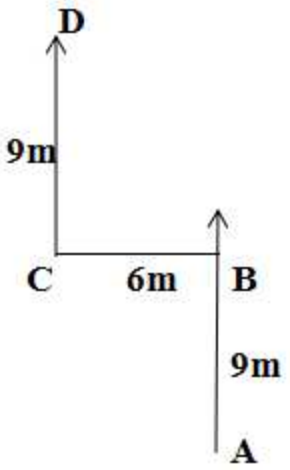
45.B

46.D

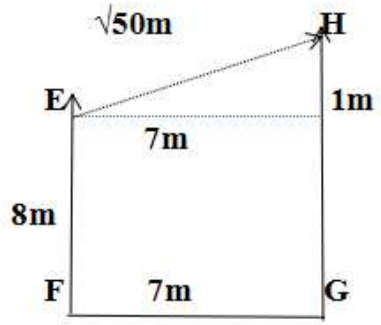
47.B



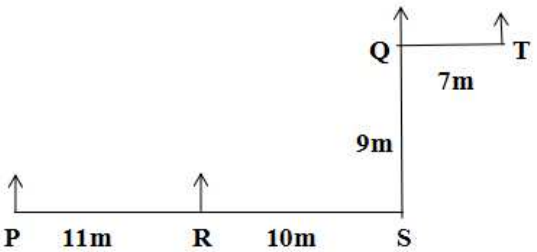
48.E



49. C



50.E



Data Interpretation and Caselet Questions Based on Mensuration

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

The following table represents information regarding six different fields.

Name of fields	Shape	Side (in m)	Length (in m)	Breadth (in m)	Base/Bases (in m)	Height (in m)	Radius (in m)	Cost of flooring/ m^2 (In Rs.)	Cost of fencing/ m (In Rs.)
A	Rectangular		28	--				25	10
B	Circular						21	--	15
C	Square	24						20	--
D	Triangular				16	--		30	15
E	Trapezium				18, 24	30		--	20
F	Parallelogram				--	20		25	10

Expected DI and Caselet based on Mensuration for Upcoming Mains Exam

1. If total cost of flooring of field A is Rs.15400 and total cost of flooring of field D is Rs.5760, find the respective ratio of total cost of fencing of field A and total cost of fencing of field D.

a) 2: 3

b) 5: 8

c) 3: 5

d) Cannot be determined

e) None of these

2. If total cost of flooring of field B is Rs.34650 and total cost of flooring of field E is Rs.12600, cost of flooring/m^2 of field B is what percent of the cost of flooring/m^2 of field E?

a) 110%

b) 125%

c) 75%

d) 100%

e) None of these

3. Total cost of flooring of field F is Rs.15000 and measure of another pair of parallel sides of field F is 24m. Cost of fencing/m of field C is Rs.12/m. Find the average of the cost of fencing of field C and cost of fencing of field F.

a) Rs.986

b) Rs.1020

c) Rs.1148

d) Rs.1116

e) None of these

4. Find the relation between following two quantities.

Quantity I: If cost of fencing field A is Rs.920, find the total cost of flooring of field A.

Quantity II: Field G is circular in shape and its radius is 7 m more than the radius of field B. If cost of flooring/m^2 of field G is Rs.8, find the total cost of flooring of field G.

a) Quantity I > Quantity II

b) Quantity I < Quantity II

c) Quantity I ≥ Quantity II

d) Quantity I ≤ Quantity II

5. Find the total cost of flooring of field H.

Statement I: Field H is rectangular in shape. Total cost of fencing of field H is Rs.960.

Statement II: Length of field H is 4 m more than its breadth. Cost of flooring/m^2 of field H is Rs.22. Cost of fencing/m of field H is Rs.15.

a) Statement I alone is sufficient to answer the question, but the statement II alone is not sufficient.

b) Statement II alone is sufficient to answer the question, but the statement I alone is not sufficient.

c) Either statement I alone or statement II alone is sufficient to answer the question.

d) Both statements I and II together are needed to answer the question.

e) Both statements I and II together are not sufficient to answer the question.

Directions (6 – 10): Study the following information carefully and answer the questions given below:

Neeraj have some toys which are in the form of different structures. These are cylindrical, conical, spherical. Other than solid conical structure, all two are of both types i.e., hollow as well as solid.

→ Volume of a conical toy is three times of the volume of a solid cylindrical toy while radius of a solid spherical toy is half than that the radius of a conical toy. Outer radius of hollow cylindrical toys is same as radius of solid spherical toy while average of outer radius and inner radius of hollow cylindrical toys is equal to radius of solid cylindrical toy. Height of cylindrical, conical and hollow cylindrical toys is same i.e, 14cm

→ Number of solid spherical toys is 20% of total number of toys Neeraj have. Number of hollow spherical toys is 150% more than number of conical toys. Ratio between number of solid cylindrical toys to number of conical toys is 3 : 2. Total number of hollow cylindrical toys is 40% of total number of toys Neeraj have and also '20' more than the total number of solid spherical toys Neeraj have.

→ Volume of a hollow spherical toy is 33,957 cm^2 whose inner radius is half of its outer radius. Volume of a hollow spherical toy is 5.25 time of volume of conical toy.

6. Find the total space taken by all solid spherical toys? (in cm^3)

a) 97020

b) 48510

c) 72765

d) 14553

e) 24255

7. Find the number of conical toys Neeraj have?

a) 40

b) 20

c) 15

d) 12

e) 8

8. Find the curved surface area of one hollow cylindrical toy? (in cm^2)

a) 616

b) 1232

c) 924

d) 462

e) 1386

9. Find the ratio between outer radius of hollow spherical toy to radius of solid cylindrical toy?

a) 4 : 1

b) 3 : 2

c) 3 : 1

d) 4 : 3

e) 2 : 1

10. Volume of one hollow cylindrical toy is how much more then volume of one cylindrical toy?(in cm^3)

a) 4312

b) 3234

c) 2696

d) 2156

e) 1078

Directions (11 – 15): Read the given information carefully and answer the following questions.

The given table shows the information about five different toys. These toys are of different shapes and have different dimensions.

Shape of toys	Volume(cm^3)	C.S.A(cm^2)
Spherical	----	----
Cylindrical	4752	----
Conical	----	3080
Cubical	----	1764
Hemispherical	----	----

11. CSA of spherical toy is 49π cm^2 more than the CSA of hemispherical toy. Find difference between total surface areas of these two toys if radius of spherical toy is 50% of side of cubical toy?

a) 70 π cm^2

b) 140π cm^2

c) 119π cm^2

d) 98π cm^2

e) 147π cm^2

12. Cylindrical toy and cubical toy are melted together. If 2 2/49% of volume of the given cubical toy is wasted from the molten volume and remaining molten volume is re-casted into a new cubical toy then find the total surface area of new cubical toy?

a) 3240 cm^2

b) 3672 cm^2

c) 3456 cm^2

d) 3336 cm^2

e) 3576 cm^2

13. Find the difference between volume of cubical toy and volume of hemispherical toy if radius of hemispherical toy is equal to the height of cylindrical toy which is 87.5% of radius of cylindrical toy?

a) 6570.5 cm^3

b) 6896.5 cm^3

c) 6745.5 cm^3

d) 6835.5 cm³

e) 6805.5 cm³

14. Both cylindrical toy and conical toy are melted together and after removing x cm³ from the molten liquid, remaining molten liquid is used to form 8 small hemispherical toys of radius 10.5 cm. Find value of 'x' if radius and height of conical toy are in the ratio of 4 : 3.

a) 2570 cm³

b) 2596 cm³

c) 2550 cm³

d) 2410 cm³

e) 2690 cm³

15. If CSA of spherical toy is 2464 cm² more than CSA of conical toy, then find the difference between volume of cubical toy and volume of a new spherical toy whose radius is 50% of radius of given spherical toy?

a) 4270 cm³

b) 4340 cm³

c) 4550 cm³

d) 4410 cm³

e) 4690 cm³

Directions (16 – 17): Answer the question based on the information given below.

A boy has some materials such a cone, cylinder, sphere, hemisphere etc. He decided to make some structure by joining these materials. The radius of the cone is 50% more than the radius of the sphere of volume of 16384 cm^3. The height of cylinder is twice the height of the cone. The curved surface area of the cone is 1800 cm^2. The total surface area of the hemisphere is 4356 cm^2 and the radius of hemisphere is 10% more than the radius of the cylinder. If cone is attached to one end of the cylinder and hemisphere is on the other end of the cylinder with the centre of the circle of all the materials joined to form a structure lie on same axis and is wrapped with a gift cover which costs him Rs. 6 per cm^2. [Use $\pi = 3$]

16. Find the cost of wrapping the whole structure thus formed.

a) Rs. 42984

b) Rs. 39844

c) Rs. 40684

d) Rs. 41824

e) None of these

17. Find the total volume of the whole structure thus formed.

a) 42428 cm^3

b) 42198 cm^3

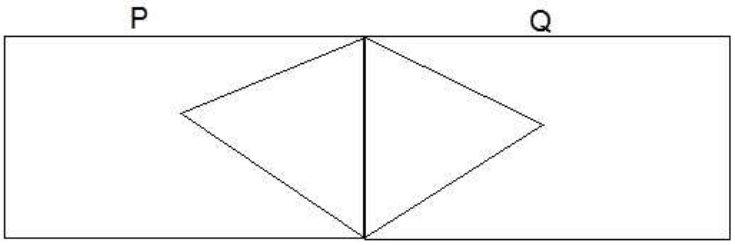
c) 42182 cm^3

d) 42128 cm^3

e) None of these

Directions (18 – 20): Answer the questions based on the information given below.

There are two rectangular fields 'P' and 'Q' adjacent to each other along their breadths. The ratio of the length of the two fields 'P' and 'Q' is 2:3, respectively. The length of the rectangular field 'Q' is 200% more than the breadth of the rectangular field 'Q'. The breadth of both the fields is equal. In both the fields a triangular shaped field is used for cultivating crops such that one of its vertices is at the centre of the field. The remaining uncultivated area of the rectangular field 'Q' is 1200 m^2 more than that of the uncultivated area of field 'P'.



18. The perimeter of a squared field is equal to the sum of the lengths of the rectangular field 'P' and 'Q'. If the cost of cultivating 20 m^2 of the squared field is Rs. 18.2, then find the total cost of the cultivation of the squared field.

a) Rs. 2275

b) Rs. 2025

c) Rs. 1920

d) Rs. 2385

e) None of these

19. Find the perimeter of the field cultivated in the field 'P'.

a) $60(\sqrt{5} - 1)$ metres

b) $60(\sqrt{5} + 1)$ metres

c) $40(\sqrt{5} + 1)$ metres

d) $40(\sqrt{3} + 1)$ metres

e) Cannot be determined

20. The area of rectangular field 'R' is equal to the 55% of the total area of rectangular field 'Q'. The length of the rectangular field 'R' is 240 metres. Find the perimeter of the rectangular field 'R'.

a) 840 metres

b) 424 metres

c) 926 metres

d) 502 metres

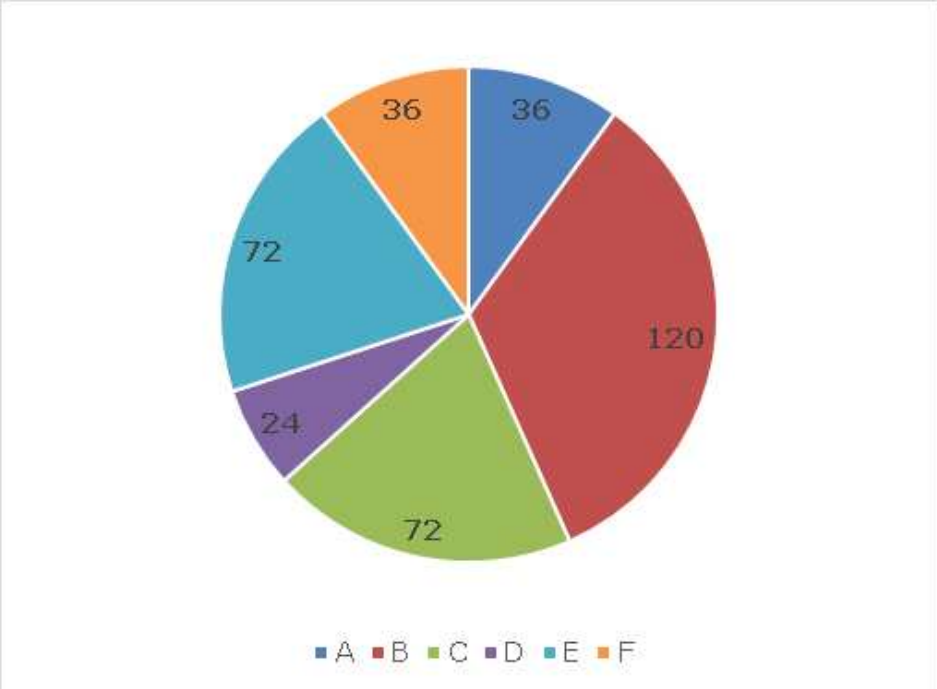
e) 660 metres

Directions (21 – 25): Study the following data carefully and answer the questions:

There are total 6 rectangles A, B, C, D, E and F, pie chart given below shows the distribution (degree) of length (cm) of one side of those 6 different rectangles.

Table given below shows the length of another side of those 6 rectangles as a per cent of length of given side in the pie chart.

Sum of the pie chart = 120 cm



Rectangles	Length of another side as per cent of given side
A	41(2/3)%
B	22.5%
C	41(2/3)%
D	75%
E	29(1/6)%
F	291(2/3)%

21. Inside the rectangular filed C a cylindrical pit of radius 7 cm and depth 8.6 cm is dig. The soil coming out after digging is spread out over remaining part of the field, then what is the increment in the level of that rectangular field?

a) 8.6 cm

b) 15.4 cm

c) 10.4 cm

d) 12.8 cm

e) None of these

22. If the cost of flooring is Rs.15/cm^2 and cost of fencing is Rs.25/cm, then what is the ratio of cost of flooring the rectangular field A to the cost of fencing the rectangular field D?

a) 9: 7

b) 7: 5

c) 11: 9

d) 4: 3

e) None of these

23. There is an empty rectangular pool B of water and a tap is opened to fill the water into the pool. If the tap can fill the water up to a height of 5 cm in 12 minutes, then at what rate (litre/hour) the tap is filling the water in the pool?

a) 10

b) 12

c) 9

d) 6

e) None of these

24. A rectangular pool F is filled with water up to a height of 22 cm. If the pool is emptied by using a cylindrical bucket of base radius 3.5 cm and depth 12 cm, then how many such buckets are needed to be emptied the pool completely?

a) 10

b) 25

c) 30

d) 20

e) None of these

25. If the pools A and C are filled up to a height of 3 cm and 2.75 cm respectively and pool D is initially empty, whole volume of water from the pool A and C are poured into pool D. Similarly, pools E and B are filled up to a height of 5 cm and 12.25 cm respectively and pool F is initially empty and water from pools E and B are poured into pool F, then what is the ratio of height of water in pool D to that in pool F?

a) 7: 5

b) 9: 7

c) 5: 3

d) 11: 8

e) None of these

Directions (26 - 30): Study the following graph carefully and answer the given questions.

Shape	Total Surface area (cm^2)	Volume (cm^3)	Radius/ side(cm)	Height (cm)	Cost of paint the surface area per cm^2	Time taken by Raja to paint the surface area (days)	Time taken by ram to paint the surface area (days)	Wage per day
Cylinder	924	2156	-	14	12	4	25	120
Cube	726	-	-	-	8	8	15	85
Cone	3696	12936	21	-	6	9	7	50
Hemisphere	4158	19404	-	-	5	6	4	180
sphere	-	-	12	-	-	3	5	900

Note: Time taken by Raja and Ram to paint the surface area is equal to the time taken by Raja and Ram to paint the Total surface area.

26. Find the cost of painting a frustum whose smaller radius is equal to the radius of cylinder and larger radius equals to the radius of hemisphere also its height is equal to that of cone height, if the cost of paint @5/cm^2

a) Rs.25648

b) Rs.21340

c) Rs.21300

d) Rs.21568

e) None of these

27. Total cost to paint a cube is what percentage more/less than cylinder, if paint on both the objects is done by Ram? (Approximately)

a) 40%

b) 75%

c) 60%

d) 50%

e) 45%

28. The structure of a toy resembles hemisphere at the bottom, cylinder in the middle and cone at the top. Find the total cost to paint a toy by Ram if the number of days taken by Ram to paint CSA is 80% of TSA.

a) Rs 38368

b) Rs 40586

c) Rs 35668

d) Rs 25648

e) None of these

29. Sphere, cylinder and cube are melted to make 8 identical small spheres. These identical spheres are then put in a cylindrical jar. Ratio of height and radius of cylinder is 2:3. Ratio of radius of small identical sphere and radius of cylindrical jar is 1:3. Find the volume of cylindrical jar.

a) 12256 cm^3

b) 22500 cm^3

c) 19404 cm3

d) 13115 cm^3

e) None of these

30. Find the volume of a cuboid. If the ratio of length of cuboid to the height of cylinder, ratio of radius of cone to breadth of cuboid and ratio of radius of sphere to height of cuboid is 6:7, 3:1and 3:2.

a) 512 cm^3

b) 672 cm^3

c) 913 cm^3

d) 815 cm^3

e) None of these

Directions (31 – 35): Study the following graph carefully and answer the given questions.

A man has solids of shapes (sphere, cube, cylinder, cuboid & cone) Area of base of cuboid is 110 cm^2. Radius of sphere and cylinder are equal but volume of cylinder is 25% less than the volume of sphere. Height of cone is equal to the edge of cube and volume of cube 95 5/11% of volume of cone. Radius cone is equal to height of cuboid and height of cuboid is half of the diameter of the sphere. Ratio of volume of cylinder, cuboid and cube are 462 : 110 : 441 respectively.

31. What is the surface area of sphere ?

a) 5244 cm^2

b) 5544 cm^2

c) 4254 cm^2

d) 4046 cm^2

e) 1044 cm^2

32. Surface area of cube is what % of the total surface area of cylinder ?

a) 57 8/11%

b) 23 1/11%

c) 46 1/11%

d) 98 1/11%

e) 47 8/11%

33. What is ratio of volume of sphere, cone and cylinder.

a) 4 : 1 : 3

b) 1 : 3 : 4

c) 4 : 3 : 1

d) 5 : 3 : 2

e) 2 : 3 : 5

34. What is the sum of volume of cone and volume of cuboid?

a) 10131 cm^3

b) 4301 cm^3

c) 12012 cm^3

d) 13013 cm^3

e) 9801 cm^3

35. What is the curved surface area of cone.

a) $1412\sqrt{2}$ cm^2

b) $1368\sqrt{2}$ cm^2

c) $1423\sqrt{2}$ cm^2

d) $1531\sqrt{2}$ cm^2

e) $1386\sqrt{2}$ cm^2

Directions (36 – 40): Answer the questions based on the information given below.

The table given below shows the percentage of the total capacity of container filled with mixture of milk and water in each of the five different three – dimensional containers i.e. cylindrical, hemispherical, conical, cuboidal and cubical containers. [Use $\pi = 3$]

Containers	Percentage of mixture	Quantity of water (in m^3)	Ratio of milk: water
Cylindrical	40	336	13: 8
Hemispherical	60	307.2	1: 1
Conical	75	324	5: 4
Cuboidal	80	2700	3: 5
Cubical	50	399.3	2: 3

36. Find the height of the cylindrical container, if its radius is 7 m.

a) 12 m

b) 15 m

c) 10 m

d) 18 m

e) 20 m

37. Find the radius of the hemispherical container.

a) 7 m

b) 8 m

c) 9 m

d) 10 m

e) 11 m

38. Find the difference between the total capacities of hemispherical container and that of conical container.

a) 92 m^3

b) 18 m^3

c) 76 m^3

d) 52 m^3

e) None of these

39. If the length and breadth of the cuboidal container is 15 m and 18 m, respectively, then find the height of the cuboidal container.

a) 20 m

b) 15 m

c) 10 m

d) 25 m

e) 30 m

40. Find the total surface area of the Cubical container, if it is opened from one face.

a) 576

b) 632

c) 605

d) 660

e) None of these

Directions (41 – 45): Answer the questions based on the information given below.

The table given below gives information about five different cones. Some data are given while some are missing in the table. (Take $\pi = 3$)

	Height	Curved surface area	Radius	Volume	Slant height
Cone A	-	405 cm^2	9 cm	-	-
Cone B	-	-	30 cm	-	34 cm
Cone C	24 cm	-	-	2400 cm^3	-
Cone D	7 cm	-	24 cm	-	-
Cone E	-	1740 cm^2	-	-	29 cm

41. Find the sum of the capacity of cone A and cone B.

a) 15122 cm^3

b) 15542 cm^3

c) 15820 cm^3

d) 15372 cm^3

e) 15624 cm^3

42. Find the ratio of radius of cone C to radius of cone E.

a) 2: 5

b) 3: 4

c) 1: 2

d) 2: 3

e) 3: 5

43. Total surface area of cone A is what percentage of total surface area of cone C

a) 38%

b) 60%

c) 44%

d) 26%

e) 53%

44. Find the time taken by a pipe P to fill cone E at the rate of 35cm^3 per second.

a) 180 seconds

b) 260 seconds

c) 215 seconds

d) 240 seconds

e) None of these

45. Find the difference between the cost of painting the curved surface area of cone B and that of cone D, if the rate of painting cone B and cone D is Rs. 12.5/m^2 and Rs. 15/m^2 respectively.

a) Rs. 11750

b) Rs. 11500

c) Rs. 12500

d) Rs. 12750

e) Rs. 11250

Directions (46 – 50): The following table shows different vessels, type of their shapes and different dimensions of these vessels.

(Note: Some values are missing, you need to calculate those values if required.)

Vessels	Type of Shape	Dimension (in cm.)			
		Length	Breadth	Height	Radius
A	Cube	35	-	-	-
B	Cuboid	-	-	25	-
C	Cone	-	-	28	-
D	Cylinder	-	-	20	-
E	Hemisphere	-	-	-	21

46. Vessel E is filled with water and then the water is poured from vessel E to vessel D. If the radius of the vessel D is same as the height of vessel C, then what is the height of water in vessel D?

a) 7 3/8 cm

b) 7 1/8 cm

c) 7 5/8 cm

d) 7 7/8 cm

e) None of these

47. If the area of the bottom of vessel B is $1260cm^2$, then the capacity of vessel A is how much percent more than that of vessel B?

a) 33 1/3%

b) 36 1/9%

c) 35 5/7%

d) 36 4/11%

e) 30 10/13%

48. What is the ratio of lateral surface areas of vessel C and vessel E if the ratio of radius and height of vessel C is 3 : 4?

a) 5 : 6

b) 6 : 5

c) 3 : 5

d) 5 : 3

e) None of these

49. Capacity of another cylindrical vessel F is 10% more than that of vessel A. If the height of vessel F is 49, then radius of vessel F is how much percent less than that of vessel E?

a) 18 2/11%

b) 22 2/9%

c) 16 2/3%

d) 14 2/7%

e) None of these

50. Vessel D needs to be painted on the lateral surface while vessel A needs to be painted on lateral surface as well as on the bottom. What will be the total expenditure of painting these vessels if the cost of painting is Rs.0.2/cm^2 if the radius of the vessel D is same as the height of vessel C?

a) Rs.1919

b) Rs.1939

c) Rs.1909

d) Rs.1929

e) None of these

Solution and Detailed Explanation

Solutions:

1. Answer: d)

Area of field A = 15400/25 = 616 m^2

We know that

Area of a rectangle = length x breadth

=> 616 = 28 x breadth

=> Breadth = 616/28

=> Breadth = 22 m

We know that

Perimeter of rectangle = 2 x (length + breadth)

= 2 x (28 + 22)

= 2 x 50

= 100 m

Cost of fencing of field A = 100 x 10 = Rs.1000

Area of field D = 5760/30 = 192 m^2

We know that