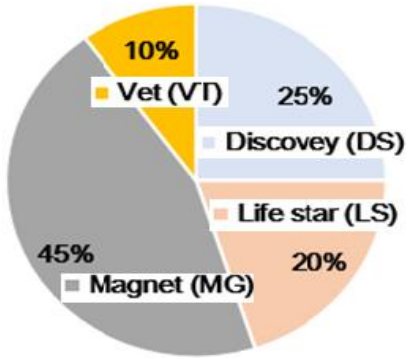
Math Paper Test – 3 & 5

{1 – 6}:- Read the following information carefully and answer the questions.
The given table chart shows the total number of rupees notes (Rs.2000 + Rs.500 + Rs.200) printed on five days i.e:- Monday, Tuesday, Wednesday, Thursday and Friday and also given the percentage of Rs.2000 notes printed on these days and also given the number of Rs.500 notes printed on these days.

Days	Total number of rupees notes printed	% of the number of Rs.2000 notes printed	Number of Rs.500 notes printed
Monday	1200	35%	384
Tuesday	1050	30%	441
Wednesday	1800	35%	450
Thursday	800	28%	320
Friday	1500	30%	675

1. If the number of Rs.100 notes printed on Tuesday is 14.28% more than the number of Rs.200 notes printed on Tuesday and the number of Rs.100 notes printed on Thursday is 25% more than the number of Rs.500 notes printed on Thursday, then find the total number of Rs.100 notes printed on Tuesday and Thursday?
1.736 2.780 3.720 4.744 5.None of these
2. Find the average number of Rs.500 notes printed on Wednesday and the number of Rs.200 notes printed on Tuesday and Wednesday?
1.440 2.474 3.488 4.495 5.None of these
3. Find the ratio of the number of Rs.500 notes printed on Friday to the number of Rs.2000 notes printed on Tuesday?
1.9:7 2.15:7 3.11:15 4.13:11 5.None of these
4. The number of Rs.2000 notes printed on Tuesday and the number of Rs.500 notes printed on Friday together is what percentage of the number Rs.200 notes printed on Tuesday and Thursday together?
1.154% 2.172% 3.180% 4.164% 5.None of these
5. If the value of the Rs.2000 notes printed on Saturday is Rs.40000 less than that of Monday and the number of Rs.500 notes printed on Wednesday is 50 more than that of Saturday and the number of Rs.200 notes printed on Saturday is 420, then find the total number of notes printed on Saturday?
1.1280 2.1220 3.1400 4.1380 5.None of these
6. The number of Rs.2000 notes printed on Friday is what percentage of the number of Rs.200 notes printed on Wednesday?
1.82.5% 2.78.5% 3.68.5% 4.72.5% 5.62.5%
{7 – 12}:- Read the following information carefully and answer the questions based on it. The chart given below shows the percentage distribution of employees in four different division of a Pharma company – Discovery, Life star, Magnet, and Vet, and table shows the number of male employees in these divisions. **{Total = 12000}**

Name of division	Number of male employees
DS	1800
LS	Twice the female employees
MG	-
VT	-



Notes: a) Number of male employees in MG division is 450% more than number of male employees in VT division. **b)** Average number of female employees in LS and MG division together/Number of male employees in VT division = a/1
Where a is a single digit prime number > 3 such that (a + 2) is also a prime number.
7. If 60% of the total number of male employees in Life star and Vet division together and 37.5% of the total number of female employees in Life star and Vet division together are from non – medical background. What percentage of the total number of employees with medical background of both divisions are male?
1.40% 2.44.44% 3.45% 4.55.55% 5.None of these
8. For the Magnet division, 40% of male employees and 75% of female employees are in manufacturing department and rest are in marketing department. Find number of employees in marketing department of the magnet division.
1.2120 2.1920 3.1680 4.3720 5.3280
9. Company started a new division, so there is transfer of employees from given four division in to new division called GYNE division. 25% of the female employees from each division are transferred to GYNE division. What is the total number of employees in GYNE division. (There are only female employees in GYNE division)
1.1450 2.1280 3.1250 4.1300 5.1500
10. Number of female employees in (LS + VT) division together is (Z – 25) % more/less than male employees in (LS + VT) division together. Find the value of Z.
1.50 2.40 3.45 4.5 5.55
11. Annual CTC of each employee of DS and MG is Rs. 4 lakhs and Rs. 2 lakhs, while CTC of each employee of LS is 25% more than DS, and for VT, CTC of each employee is 25% more than company MG. Which of the following is/are correct?
I. The total income of all employees of DS division is same as that of LS division.
II. The total income of all employees of MG division is 260% more than that of VT division.
III. The difference between total income of all employees of LS and MG division is 12 lakhs.
1.II and III only 2.I only 3.I and III only 4.I and II only 5.None of these
12. For DS division, 1200 male employees working 12 hours a day, while rest male employees working 9 hours a day. Half of the female employees working 6 hours a day and rest 5 hours a day. Find average weekly working hour of an employee in division, if there are 5 working days in a week.
1.8.8 2.9.2 3.8.2 4.8.4 5.None of these
{13 – 17}:- Read the following information carefully and answer the questions based on it.
There are four schools having a certain number of boys and girls.
The number of girls in School P is 66.66% more than that in School Q, while the number of boys in School S is 10% less than that of boys in School P.
The difference between the total number of students in School Q and School S is 30, while the ratio of girls in Schools P and Q is same as the ratio of boys in Schools P and Q
The number of girls in School S is the same as the number of boys in School Q, while the percentage of girls in School Q and School S is the same. The respective ratio of the total number of girls in all four schools together to the number of girls in School R is 5: 1.
The number of boys in School R is twice that of the girls in the same school.
13. The average age of boys in school P is 16 years, while average age of girls in

same school is 21 years. Find average age of a student in school P.
1.20 years 2.18 years 3.17.5 years 4.16.33 years 5.None of these
14. On a certain day, out of total number of students in all schools together, 20% of boys were absent and 60% of girls are present. Find total number of students present in all given schools together. 1.245 2.210 3.235 4.220 5.215
15. Out of total number of boys in all given schools together, number of boys in school R is (Z/2) %. Find the value of Z. 1.75 2.60 3.50 4.65 5.12.5
16. The difference between number of boys and girls in school S is what percentage of number of girls in school P. 1.55% 2.72% 3.50% 4.35% 5.None of these
17. P is a three-digit number such that: Its tens digit is Z% greater than its hundreds digit. And Its units digit is less than its tens digit. Q is another three-digit number, its tens digit is also Z% greater than its hundreds digit. When 211 is subtracted from Q, the result is 26. If the units digit of both P and Q is the same, find the sum of the digits of P. 1.20 2.23 3.22 4.17 5.21
18. Average present age of P, Q, and R together is 15 years. Age of P after three years is 20% less than present age of Q. Present age of R is a two-digit number such that its tens place digit is twice of its unit place digit. Age of each is a natural number.
Quantity I: Find the value of five times of sum of present age of P and Q together.
Quantity II: Find 8 times of present age of Q. 1.Quantity I > Quantity II 2.Quantity I < Quantity II 3.Quantity I = Quantity II 4.Quantity I + Quantity II > 240 5.None of these
19. Vessels P and Q contain mixture of milk and water, such that milk in vessel P is 50% as that of milk in vessel Q. When half of the mixture from vessel P is poured into vessel Q, then resultant mixture contains 66.66% milk. Initially, water in vessel Q is 25% as that of milk. Find concentration of water in vessel P, initially.
1.60% 2.40% 3.66.66% 4.33.33% 5.None of these
20. A train running at a speed of (Z + 8) m/sec crosses a cyclist, running at 18 m/s in same direction in one minute. It also crosses a pole in 40 seconds. Find the time taken by train to cross a platform of length 2700 meters.
1.80 seconds 2.70 seconds 3.84 seconds 4.72 seconds 5.90 seconds
21. A shopkeeper sold an article at 0.5Z% profit after allowing discount of (Z + 20)%. If he sold the article at one – third of market price, so there is loss of 50% occurred. Find the profit % earned on article if it is sold after discount of (3Z – 10)%.
1.25% 2.20% 3.30% 4.15% 5.None of these
22. A boat rowing from point A to point B. Boat started from point A reached point B, and then again reached point A. It is noticed that it covers first 10% of total journey in 3/40 of total time. Speed of stream is 12 km/h, find upstream speed of boat.
1.9 km/h 2.36 km/h 3.48 km/h 4.60 km/h 5.None of these
23. A quadratic equation given below in Z has two roots are A and B give below.
$Z^2 - 13Z + P = 0$.
A > B and both roots of equation are natural number < 10. Find the value of P.
Statement I: Exactly one root of the equation is prime.
Statement II: One root of the equation is greater than 5, and exactly one root is even.
1.I only 2.II only 3.Either I or II only 4.Both I and II together required 5.None of these
24. In an exam, Arun scored 52.5% marks which is Z more than passing marks. In the same exam, Minakshi managed to get 80 more than passing marks by scoring 140 less that Arun and she achieved 35% of maximum marks. Find the value of Z.
1.300 2.210 3.220 4.190 5.None of these
25. A bag contains balls of three different colours – black, white and green. Number of black balls are 12. Find the probability of picking a white ball from bag. Number of green balls is more than black balls. (All values are integer) Statement I: Number of pink balls in another bag is 50% as that of green balls in given bag. **Statement II:** Number of white balls in bag is 40% as that of green balls and total balls in bag is not more than 40.
1.I only 2.II only 3.Either I or II 4.Both I and II together 5.None of these
26. Rs. Z is invested at 24% per annum at simple interest for five years and the total amount is invested for two more years at 10% compounded annually. The interest is obtained for two years is Rs. 1386. Find approximate value of Z.
1.3600 2.3000 3.2500 4.5400 5.4000
27. In a 600 meters race, P beats Q by 150 meters and Q beats by R by 100 meters.
Quantity I: P and R running in opposite direction. Find total distance covered in 5 seconds.
Quantity II: Find the distance travelled by Q in 10 seconds. 1.Quantity I > Quantity II 2.Quantity I < Quantity II 3.Quantity I = Quantity II 4.Quantity I ≤ Quantity II 5.None
28. Pipe P can fill tank in Z hours and Q and R together can fill it in Y hours. If pipe Q fills the tank for 1.6Y hours, and pipe P fill the remaining tank in 0.6Z hours. Find in how many hours can pipes P and R together fill the whole tank. It is also noted that Z = 2Y. 1.2Z hours 2.2.5Z hours 3.2Z/3 hours 4.2Z/5 hours 5.2.4Z hours
29. Find out the wrong number in the following number series.
24, 42, 76, 126, 203, 320.5
1.126 2.203 3.76 4.42 5.24
30. Find out the wrong number in the following number series.
980, 956, 1006, 932, 1028, 908
Wrong number in the series is Z, such that (Z + Y) is a perfect square. Find the minimum value of Y.
1.29 2.44 3.18 4.20 5.None of these
31. Find out the wrong number in the following number series.
45, 60, 80, 105, 155, 220, 310
1.105 2.310 3.45 4.60 5.155
32. Find out the wrong number in the following number series.
215, 267, 317, 364, 407, 455
1.407 2.455 3.267 4.215 5.None of these
33. Find out the wrong number in the following number series.
1200, 1204, 1144, 1360, 848, 1848, 120
1.1200 2.1144 3.1848 4.1360 5.1204
{34 – 37}:- Read the following information carefully and answer the questions based on it.
P and Q entered into a partnership by investing amount of 'Z+3500' and 'Z' respectively. Both left the business after 'n' number of years and R and S joined the business with the amount of 2500 more than that of P and with half of Q respectively. After five years, Q again joined the business with the investment of 6500 and at the end of 15 years from the starting, the ratio of profit share of P and Q is 1:1 and the profit ratio of R and S is 4:1.
34. What is the ratio of profit share of P and R?
1.247:408 2.257:418 3.217:345 4.245:417 5.None of these
35. What is the value of 'n'?
1.5.5 2.4.5 3.6.5 4.8.5 5.None of these
36. What is the initial investment of Q?
1.Rs. 3000 2.Rs. 12000 3.Rs. 9500 4.Rs. 6000 5.Rs. 4500
37. What is the difference between initial investment of R and P?
1.Rs.4200 2.Rs.3400 3.Rs.2500 4.Rs.3700 5.None of these
38. A square sheet of 36 cm (side) is joined with length of rectangular sheet of length 96 cm and have perimeter 264 cm. If new sheet so form is rolled along its length to form a cylinder, find the value of (2r + 18) where r is the radius of cylinder.
1.66 cm 2.74 cm 3.46 cm 4.50 cm 5.60 cm
39. An article is marked up by 66.66%, and sold at profit of Rs. 600, find the value of (2P + 2400), where P is the cost price of article.
Statement I: The selling price of article is Rs. 200 more than 50% of sum of P and marked price. **Statement II:** The discount of 10% given on article.
1.Statement I alone is sufficient to answer the question
2.statement II alone sufficient to answer the question
3.Either I or II sufficient to answer the question
4.Both statements together necessary to answer the question
5.Both statements together are not necessary to answer the question
40. In how many ways 4 boys and 4 girls can sit in a straight line, such that no two girls and no two boys sit together?
1.572 2.1648 3.1152 4.288 5.None of these

{1 – 5}
Solution
Monday:
Number of Rs.2000 notes printed = 1200 * 35/100 = 420
Number of Rs.200 notes printed = 1200 – 420 – 384 = 396
Tuesday:
Number of Rs.2000 notes printed = 1050 * 30/100 = 315
Number of Rs.200 notes printed = 1050 – 315 – 441 = 294
Wednesday:
Number of Rs.2000 notes printed = 1800 * 35/100 = 630
Number of Rs.200 notes printed = 1800 – 630 – 450 = 720
Thursday:
Number of Rs.2000 notes printed = 800 * 28/100 = 224
Number of Rs.200 notes printed = 800 – 224 – 320 = 256
Friday:
Number of Rs.2000 notes printed = 1500 * 30/100 = 450
Number of Rs.200 notes printed = 1500 – 450 – 675 = 375

Days	Number of Rs.2000 notes printed	Number of Rs.500 notes printed	Number of Rs.200 notes printed
Monday	420	384	396
Tuesday	315	441	294
Wednesday	630	450	720
Thursday	224	320	256
Friday	450	675	375

1. Answer: A
Number of Rs.100 notes printed on Tuesday = 294 + 294 * 14.28/100 = 294 + 294 * 1/7 = 294 + 42 = 336
Number of Rs.100 notes printed on Thursday = 320 * 125/100 = 400
Required sum = 336 + 400 = 736
2. Answer: C
Required average = (450 + 294 + 720)/3 = 1464/3 = 488
3. Answer: B
Required ratio = 675:315 = 15:7
4. Answer: C
Required percentage = (315 + 675)/(294 + 256) * 100 = 990/550 * 100 = 180%
5. Answer: B
Value of Rs.2000 notes printed on Saturday = 420 * 2000 – 40000 = 840000 – 40000 = Rs.800000
Number of Rs.2000 notes printed on Saturday = 800000/2000 = 400
Number of Rs.500 notes printed on Saturday = 450 – 50 = 400
Total number of rupees notes printed on Saturday = 400 + 400 + 420 = 1220
6. Answer: E
Required percentage = 450/720 * 100
= 62.5%
{7 – 12}
Solution
Number of employees in DS division = 25% x 12000 = 3000
Number of employees in LS division = 20% x 12000 = 2400
Number of employees in MG division = 45% x 12000 = 5400
Number of employees in VT division = 10% x 12000 = 1200
Number of male employees in DS = 1800
So, number of female employees in DS = 3000 – 1800 = 1200
Ratio of the number of male and female employees in LS division = 2:1
So, the number of male and female employees in LS division = 1600 and 800
Let number of male employees in VT division = 2y
So, number of male employees in MG division = 5.5 x 2y = 11y
Average number of female employees in LS and MG together = [(5400 – 11y) + 800]/2 = 3100 – 11y/2
Average number of female employees in LS and MG division together/Number of male employees in VT division = a/1
where a is a single digit prime number > 3 such that (a + 2) is also a prime number.
So, only possible value of a = 5
3100 – 11y/2 = 5 x 2y
3100 = 31y/2
So, value of y = 200

Name of division	Total employees	Male employees	Female employees
DS	3000	1800	1200
LS	2400	1600	800
MG	5400	2200	3200
VT	1200	400	800
Total	12000	6000	6000

7. Answer: B
According to the question,
For (LS + VT)
Total employees = 2400 + 1200 = 3600
Number of male employees = 1600 + 400 = 2000
Number of female employees = 3600 – 2000 = 1600
Number of males with medical background = 40% x 2000 = 800
Number of females with medical background = 62.5% x 1600 = 1000
Required percentage = 800/1800 x 100 = 44.44%
Hence answer is option B
8. Answer: A
For Magnet division
Number of male employees in Marketing department = 60% x 2200 = 1320
Number of female employees in marketing department = 25% x 3200 = 800
Required sum = 1320 + 800 = 2120
Hence answer is option A
9. Answer: E
Total employees in GYNE division = 25% x 6000 = 1500
Hence answer is option E
10. Answer: C
Number of female employees in (LS + VT) division = 800 + 800 = 1600
Number of male employees in (LS + VT) division = 1600 + 400 = 2000
Required percentage change = (2000 – 1600)/2000 x 100 = 20%
Z – 25 = 20
Z = 45
Hence answer is option C
11. Answer: D
Total income of DS division = 3000 x 4 = 12000 Lakh
Total income of LS division = 2400 x 5 = 12000 Lakh
Total income of MG division = 5400 x 2 = 10800 Lakh
Total income of VT Division = 1200 x 2.5 = 3000 Lakh
I. Total income of all employees of DS division is same as that of LS division. (correct)
II. Total income of all employees of MG division is 260% more than that of VT division. (correct)
Required % change = (10800 – 3000)/3000 x 100 = 260%

III. Difference between total income of all employees of LS and MG division is 120 lakhs. (incorrect)
Required difference = 12000 – 10800 = 1200 lakhs
Hence answer is option D

12. Answer: A

For DS Division,
Total working hours of male employees = 1200 x 12 + 600 x 9 = 19800
Total working hours of female employees = 600 x 6 + 600 x 5 = 6600
Required average = (19800 + 6600)/3000 = 8.8 hours
Hence answer is option A

{13 – 16}

Solution

The number of girls in P is 66.66% more than Q.
So, ratio of girls in school P and Q = 5:3
Let the number of girls in school P = 5a
Let the number of girls in school Q = 3a
Number of boys in S is 10% less than that of boys in school P
So, ratio of boys in school P and S = 10:9
Let the number of boys in school P = 10b
Let the number of boys in school S = 9b
Ratio of boys in P, and Q is same as girls in P and Q.
10b / ? = 5a / 3a
? = 6b
The number of boys in school Q = 6b
Number of boys in Q = number of girls in S = 6b
The percentage of girls in School Q and School S is the same.
3a / 6b + 3a = 6b / 15b
15a = 12b + 6a
a = 4/3 b
Difference between total students in school Q and School S is 30
So, 15b – 10b = 30
So, value of b = 6
Then the value of a = 8
So, Number of boys and girls in P = 60, 40
Number of boys and girls in Q = 36, 24
Number of boys and girls in S = 54, 36
Girls in R / Girls in (P + Q + R + S) = 1/5
So, girls in R = 1/4 x (40 + 24 + 36) = 25
So, number of boys in R = 25 x 2 = 50

Name of school	Total students	Number of boys	Number of girls
P	100	60	40
Q	60	36	24
R	75	50	25
S	90	54	36

13. Answer: B

According to question

Average age of all students = (Total age of boys + Total age of girls) / Total students
Total age of boys = Average age of boys × Number of boys = 16 × 60 = 960 years
Total age of girls = Average age of girls × Number of girls = 21 × 40 = 840 years
Total age of all students = 960 + 840 = 1800 years
Average age of a student in School P = 1800 / 100 = **18** years
Hence answer is option B

14. Answer: C

Totalnumber of boys = 60 + 36 + 50 + 54 = 200
Total number of girls = 40 + 24 + 25 + 36 = 125
Total number of students = 325
Number of boys present = 80% of total boys = 80% of 200 = 160
Number of girls present = 60% of total girls = 60% of 125 = 75
Total number of students present = 160 + 75 = 235
Hence answer is option C

15. Answer: C

Total number of boys = 200
Number of Boys in R = 50
So, Z/2 = 50/200 x 100 = 25%
So, Z = 50
Hence answer is option C

16. Answer: E

Difference between number of boys and girls in S = 54 – 36 = 18
Number of girls in P = 40
Required percentage = 18/40 x 100 = 45%
Hence answer is option E

17. Answer: C

Q – 211 = 26
That means value of Q = 237
Unit digit of both numbers is same = 7
Unit digit of P < tens place digit of P
The possible of tens place digit of P are 8 or 9
Z = (3 – 2)/2 * 100 = 50%
So,
Hundredth place digit of P = 8/150 * 100 = 5.33 (not possible)
Hundredth place digit of P = 9/150 * 100 = 6 (possible)
So, only possible tens place digit of P = 9
Hundredth place digit of P = 6
P = 697
Required sum of digits = 6 + 9 + 7 = 22
Hence answer is option C

18. Answer: C

P + Q + R = 15 x 3 = 45…….... (1)
Age of R is a two-digit number whose tens place digit is twice of its unit place digit.
R = 21 or 42
(P + 3) = 4/5 x Q
So, minimum age of Q = 5
So, age of R = 21
So, P + Q = 45 – 21 = 24……. (2)
Now,
(P + 3)/Q = 4/5
5P + 15 = 4Q
4Q – 5P = 15…….... (3)
From (2) and (3), we get
P = 9 and Q = 15
Quantity I: Find the value of five times of sum of present age of P and Qtogether.
Required value = 5 x 24 = 120
Quantity II: 8 times of present age of Q.
Required value = 8 x 15 = 120
Hence answer is option C

19. Answer: A

Ratio of milk and water in Q initially = 4:1 = 4a, a
So, amount of milk in P = 50% x 4a = 2a
Let water in P initially = b ml
Now,
(50% x 2a + 4a) / (a + 50% x b) = 2 / 1
(50% x 2a + 4a) = 2 x (a + 50% x b)
5a = 2a + b
So, b = 3a

So, required percentage of water in P initially = 3a/5a x 100 = 60%
Hence answer is option A

20. Answer: E

According to question,
(Z + 8 – 18) x 60 = (Z + 8) x 40
3Z – 30 = 2Z + 16
Z = 46
So, speed of train = 46 + 8 = 54 m/s
Length of train = 54 x 40 = 2160
Required time = (2160 + 2700)/54 = 90 seconds
Hence answer is option E

21. Answer: B

Let actual cost price and marked price of article = a and b
Now,
50% x a = 1/3 x b
So, a/b = 2/3
That means ratio of cost price and marked price of article = 2:3
Now,
2 x (100 + 0.5Z) = 3 x (100 – Z – 20)
200 + Z = 240 – 3Z
4Z = 40
So, Z = 10
When article sold at (3Z – 10) % discount, then ratio of CP and SP = 2: (3 x 80%) = 2: 2.4
Required profit percentage = 0.4/2 x 100 = 20%
Hence answer is option B

22. Answer: B

10% of Distance (AB + BA) = 3/40 x total time
Distance AB = distance BA
So, 20% x distance AB covered = 3/40 x total time
So, Total AB distance covered = 3/40 x 5 = 3/8 total time (that means downstream)
So, Total distance BA covered = 5/8 x total time (that means upstream)
Ratio of downstream speed and upstream speed = (5/8): (3/8) = 5:3
Ratio of speed of boat in still water and speed of stream = 4:1
So, speed of boat in still water = 12 x 4 = 48 km/h
So, upstream speed = 48 – 12 = 36 km/h
Hence answer is option B

23. Answer: E

Z^2 – 13Z + P = 0.
Sum of roots = (A + B) = 13
13 = 9 + 4 = 8 + 5 = 7 + 6
Statement I: Exactly one root of equation is prime.
So, (A, B) = (7, 6) and (8, 5)
So, P = 42 or 40
This statement alone is not sufficient to answer the question.
Statement II: one root of the equation is > 5 and exactly one root is even.
(A, B) = (9, 4) or (7, 6) or (8, 5)
This statement alone is not sufficient.
On combining both,
Exactly one root is prime and exactly one root is even. And also, one root > 5.
(8, 5) = 8 is even root, 5 is prime root and 8 > 5.
(7, 6) = 6 is even root, 7 is prime and both > 5.
So, we can't find the data.
Hence answer is option E

24. Answer: C

Let maximum marks = a
Score of Arun = 52.5% x a
Score of Minakshi = 52.5% x a – 140
Score of Minakshi = 35% x a
Now,
52.5% x a – 140 = 35% x a
17.5% x a = 140
So, a = 800
Passing marks = 35% x 800 – 80 = 200
So, value of Z = 52.5% x 800 – 200 = 220
Hence answer is option C

25. Answer: D

Number of black balls = 12
Number of green balls > 12
Statement I:
Number of pink balls in another bag = 1/2 x number of green balls in given bag
That means green balls are even.
Statement II:
Ratio of white and green balls = 2:5
So, number of green balls can be = 15 or 20 (since green balls should be greater than 13 and total number of balls cannot exceed 40)
So, total balls in bag = 12 + 21 or 28 = 33 or 40
On combing both statements, we get
Number of green balls = 20
Number of white balls = 2/5 x 20 = 8
Required probability = 8/40 = 1/5
Hence answer is option D

26. Answer: B

Simple interest earned on Rs. Z = 24% x 5 = 120%
Amount invested under compound interest = Z + 1.2Z = 2.2Z
Compound interest earned for 2 years at 10% per annum = 10 + 10 + 10 x 10/100 = 21%
Now,
2.2Z x 21% = 1386
So, value of Z = Rs. 3000
Hence answer is option B

27. Answer: A

When P covers 600 meters, in same time Q covers 450 meters. Time is constant, so ratio of speed is same as ratio of distance.
So, ratio of speed of P and Q = 600:450 = 4:3
When Q covers 600 meters, R covers 500 meters. So, ratio of speed of Q and R = 600:500 = 6:5
So, ratio of speed of P, Q, and R = 8:6:5 = 8x: 6x: 5x
Quantity I:
Required distance = (8x + 5x) x 5 = 65x meter
Quantity II:
Required distance = 6x x 10 = 60x meter
So, Quantity I > Quantity II
Hence answer is option A

28. Answer: D

Time taken by pipe P fill the tank = Z hours = 2Y hours
Time taken by pipes Q and R together to fill the tank = Y hours
Capacity of tank = LCM of Y and 2Y = 2Y
Efficiency of pipe P = 2Y/2Y = 1
Efficiency of pipes(Q + R) = 2Y/Y = 2
Efficiency of Q = q
Efficiency of R = 2 – q
Let
q * 1.6Y + 1 * 0.6Z = 2Y
1.6Yq + 0.6 * 2Y = 2Y
1.6q + 1.2 = 2
1.6q = 0.8
q = 0.5
Efficiency of Q = 0.5
Efficiency of R = 2 – 0.5 = 1.5
Pipes P and R together fill the whole tank = 2Y/(1 + 1.5) = 0.8Y
0.8Y = 0.8 * 0.5Z = 0.4Z = (4/10)Z = 2Z/5 hours

29. Answer: D

24 x 1.5 + 8 = **44**
44 x 1.5 + 10 = 76
76 x 1.5 + 12 = 126
126 x 1.5 + 14 = 203
203 x 1.5 + 16 = 320.5
Hence answer is option D
30. Answer: C
980 – 24 = 956
956 + 48 = **1004**
1004 – 72 = 932
932 + 96 = 1028
1028 – 120 = 908
Wrong number = Z = 1006
1006 + 18 = 1024
So, minimum value of Y = 18
Hence answer is option C
31. Answer: A
45 60 80 **110** 155 220 310
15 20 30 45 65 90
5 10 15 20 25
Hence answer is option A
32. Answer: B
215 267 317 364 407 **445**
52 50 47 43 38
2 3 4 5
Hence answer is option B
33. Answer: E
$1200 + 2^3$ = **1208**
$1208 - 4^3$ = 1144
$1144 + 6^3$= 1360
$1360 - 8^3$= 848
$848 + 10^3$= 1848
$1848 - 12^3$= 120
Hence answer is option E
{34 – 37}
Solution
Investment of P = 'Z+3500'
Investment of Q = 'Z'
Investment of R = 'Z+3500+2500'
Investment of S ='Z/2'
Profit share of P = (Z+3500)*n
Profit share of Q = Z*n + 6500*(15-n-5)
Profit share of R = (Z+6000)*(15-n)
Profit share of S = Z/2*(15-n)
Profit ratio of R and S = 4:1
[(Z+6000)*(15-n)]/[(Z/2) *(15-n)] = 4/1
Z+6000= 2Z
Z=6000
Now,
[(Z+3500)*n]/[Z*n + 6500*(15-n-5)] =1/1
9500n = 6000*n + 6500(10-n)
9500n = 6000n + 65000 -6500n
9500n+500n = 65000
10000n =65000
n =6.5 years
34. Answer: A
Profit share of P = (Z+3500)*n = 9500*6.5 =Rs.61750
Profit share of R = (Z+6000)*(15-n) = 12000*8.5 = Rs.102000
Required ratio = 61750:102000 = 247:408
Hence answer is option A
35. Answer: C
Required answer = n = 6.5
Hence answer is option C
36. Answer: D
The initial investment of Q = Z = Rs. 6000
Hence answer is option D
37. Answer: C
Investment of R = '6000+3500+2500' =Rs.12000
Investment of P = '6000+3500' =Rs.9500
Required difference = 12000-9500 = Rs.2500
Hence answer is option C
38. Answer: E
Length of rectangular sheet = 96 cm
Breadth of rectangular sheet = 264/2 – 96 = 36 cm
Length of rectangular sheet after joining square sheet = 96 + 36 = 132 cm
When he folds the sheet along length to form cylindrical sheet, then length of rectangle acts as a circumference of top or bottom surface of cylinder
So,
2 x 22/7 x r = 132
Value of r = 21 cm
Required value = 2 x 21 + 18 = 60 cm
Hence answer is option E
39. Answer: C
Ratio of CP and MP of the article = 3:5 = 3a, 5a
Selling price of article = 3a + 600
Statement I:
(3a + 600) = 200 + (5a + 3a)/2
Value of a = 400
Cost price of article = 400 x 3 = Rs. 1200
Required value = 1200 x 2 + 2400 = Rs. 4800
This statement alone is sufficient to answer the question
Statement II:
(3a + 600) = 5a x 90%
1.5a = 600
Value of a = 400
Cost price of article = 3 x 400 = 1200
Required value = 2 x 1200 + 2400 = 4800
This statement alone is sufficient to answer the question
Hence answer is option C
40. Answer: C
Required arrangements = 2 x 4! X 4! = 1152
Hence answer is option C