Quiz Date: 3rd June 2020

Q1. A, B and C start a business in partnership with initial investments of Rs. 4200, Rs. 3600 and Rs. 2400 respectively. After 4 months from the start of the business, A invests an additional amount of Rs. 1000 in the business. After 6 months from the start of the business B and C invest additional amounts in the respective ratio 1 : 2. After 10 months they get a total profit of Rs. 2820. If the share of A in profit be Rs. 1200, what was the additional investment made by B ?
(a) Rs. 420
(b) Rs. 400
(c) Rs. 440
(d) Rs. 800
(e) Rs. 500

Q2. Three friends A, B & C started a business by investing on amount of 10500, 11000 & 12500 respectively. After 9 months, B left the business while C after 6 months. At the end of year, there was a total profit of 24500. Find the share of B in the profit?
(a) 10500
(b) 9500
(c) 8085
(d) 7750
(e) 7570

Q3. Two merchants A & B start a business together. In beginning, A invests Rs. 23250 & after 4 months he debited an amount of Rs. 3750. B invests some amount in starting and drops Rs. 3000 after 7 months. At the end of year, if total profit is divided equally between them then find what amounts B had invested in the start?
(a) 21000
(b) 22000
(c) 20500
(d) 23500
(e) 25300

Q4. A, B, C start a business together. A invests Rs. 20000 for a year. B first invests Rs. 30000 but after 4 months he increases it upto Rs. 40000. In starting, C invests Rs. 40000 but after 9 months he debited Rs. 10000. At the end of year total profit is Rs. 84750. Find the share of A.
(a) 21500
(b) 19000
(c) 18500
(d) 20000
(e) 18000

Q5. Uday, a very clever businessman, started a business with very little capital. In the first year, he earned a profit of 50% and donated 50% of the total capital (initial capital + profit) to a charitable organization. The same course was followed in the 2nd and 3rd years also. If at

the end of three years, he is left with Rs. 16,875, then find the amount donated by him at the end of the 2nd year.
(a) Rs. 45,000
(b) Rs. 12,500
(c) Rs. 22,500
(d) Rs. 20,000
(e) Rs. 24,000

Q6. A and B entered into a partnership, investing Rs. 16000 and Rs. 12000 respectively. After 3 months, 'A' withdraw Rs. 5000, while B invested Rs. 5000 more. After 3 months more, C joins the business with a capital of Rs. 21,000. After a year, they obtained a profit of Rs. 26400. What is B's share in the profit?
(a) Rs.10050
(b) Rs.11600
(c) Rs.10500
(d) Rs.10800
(e) Rs.18000

Q7. Find the probability that sun rises in the west.
(a) 1/4
(b) 1/2
(c) 0
(d) 1
(e) 0.2

Q8. 3 unbiased coins are tossed. Find the probability of getting exactly two 'Heads'.
(a) 1/8
(b) 1/4
(c) 3/8
(d) 1/2
(e) 3/5

Q9. In how many different ways can Ram arrange the letters of the word ALLAHABAD?
(a) 7650
(b) 7560
(c) 6750

(d) 5760
(e) 7660

Q10. Find total number of the 3 digit odd numbers by using the digits 2, 3, 4, 5 when repetitions of digits are not allowed.
(a) 12
(b) 22
(c) 15
(d) 18
(e) 24

Q11. In how many ways a committee, consisting of 5 men and 6 women can be formed from 8 men and 10 women?
(a) 266
(b) 5040
(c) 11760
(d) 86400
(e) 366

Q12. A box contains 2 white balls, 3 black balls and 4 red balls. In how many ways can 3 balls be drawn from the box, if at least one black ball is to be included in the draw?
(a) 32
(b) 48
(c) 64
(d) 96
(e) 36

Q13. A bag has ten mangoes out of which three are rotten. Two mangoes are selected at random. Find the probability that the mangoes are of both types.
(a) 21/40
(b) 23/40
(c) 7/30
(d) 7/15
(e) None of these

Q14. The probability of Neha and Nikita passing an exam is 2/3 and 3/4, respectively. Find the probability that at least one of them passes the exam.
(a) 1/12
(b) 1/4
(c) 11/12
(d) 1/2
(e) 7/12

Q15. Bag 1 has three red and four black balls and bag 2 has four red and three black balls. One bag is selected at random and a ball drawn out of it. Find the probability that the ball drawn is red.

(a) 1/2
(b) 12/49
(c) 3/7
(d) 5/7
(e) None of these

Solutions

S1. Ans.(b)
Sol.
Let B invests additional amount of Rs. x and C Rs. 2x respectively.
(A's profit) : (B's profit) : (C's profit)
= [4200 × 4 + 5200 × 6] : [3600 × 6 + (3600 + x) × 4] : [2400 × 6 + (2400 + 2x) × 4]
= 12000 : (9000 + x) : (6000 + 2x)

$$\therefore \text{A's profit} = \frac{12000}{27000 + 3x} \times 2820$$

$$\Rightarrow 27000 + 3x = \frac{12000}{1200} \times 2820$$

$$\Rightarrow x = \text{Rs.}400$$

S2. Ans.(c)
Sol.
Profit of A : Profit of B : Profit of C
= 10500× 12 : (11000 × 9) : 12500 × 6
= 105 × 4 : 110 × 3 : 125 × 2
= 84 : 66 : 50
= 42 : 33 : 25

$$\therefore \text{Share of B} = \frac{33}{42 + 33 + 25} \times 24500 = 8085$$

S3. Ans.(b)
Sol. Let B invests x amount.
Profit of A : Profit of B = (23250 × 4 + 19500 × 8) : [x × 7 + (x – 3000) × 5]
Since, profit of A = Profit of B

249000 = 12x – 15000
⇒ x = 22000

S4. Ans.(e)
Sol. Profit of A : Profit of B : Profit of C
= (20000 × 12) : (30000 × 4 + 40000 × 8) : (40000 × 9 + 30000 × 3)
= 24 : (12 + 32) : (36 + 9)
= 24 : 44 : 45
$\therefore \text{Share of A} = \frac{24}{24+44+45} \times 84750$
= 24 × 750
= 18000

S5. Ans.(c)
Sol.
Let in the start of Ist year he had Rs. x.
∴ Amount left at the end of 1st year
$= \frac{150x}{100} - \frac{150x}{200}$
$= \frac{150x}{200}$
$= \frac{3x}{4}$
Amount left of the end of 2nd year
$= \frac{1}{2} \times \frac{3x}{4} \times \frac{150}{100}$
$= \frac{9x}{16}$
Amount left at the end of 3rd year
$= \frac{1}{2} \times \frac{9x}{16} \times \frac{3}{2}$
$= \frac{27x}{64}$
ATQ,
$\frac{27x}{64} = 16875$
⇒ x = 40,000
$\therefore \text{Required answer} = \frac{9}{16} \times 40{,}000$
= 22,500

S6. Ans.(d)
Sol.
A's share : B 's share : C's share
= (16 × 3 + 11 × 9) : (12 × 3 + 17 ×9) : (21 ×6)
= 147 : 189 : 126 = 7 : 9 : 6
Therefore B's share
$= \left(\frac{26400}{7+9+6} \times 9\right) = \text{Rs. } 10800$

S7. Ans.(c)
Sol. Rising of sun is a factual happening.
And, fact given in question is universally false.
∴ Probability = 0

S8. Ans.(c)
Sol.
Favorable cases = HHT, HTH, THH
= 3
∴ Required probability = $\frac{3}{8}$

S9. Ans.(b)
Sol.
ALLAHABAD
∴ Total required ways
$= \frac{9!}{4!\times 2!}$ (since 4 A's and 2 L's)
$= \frac{9\times 8\times 7\times 6\times 5}{2\times 1}$
= 7560

S10. Ans.(a)
Sol.
For a number to be odd, last digit of that number must be an odd digit.
∴ Required ways = 2 × 3 × 2 = 12

S11. Ans.(c)
Sol.
$^{8}C_5 \times {}^{10}C_6 = \frac{8\times 7\times 6}{3\times 2} \times \frac{10\times 9\times 8\times 7}{4\times 3\times 2}$
= 56 × 210
= 11760

S12. Ans.(c)

Sol.
Ways of drawing at least one black ball = Total no. of ways – no black ball

$$^9C_3 - {}^6C_3$$
$$= \frac{9\times8\times7}{3\times2} - \frac{6\times5\times4}{3\times2}$$
$$= 84 - 20$$
$$= 64$$

S13. Ans.(d)
Sol.
Required probability $= \frac{^3C_1 \times {}^7C_1}{^{10}C_2} = \frac{7}{15}$

S14. Ans.(c)
Sol.
Possible cases are – 1. Neha passed in exam and Nikita failed
2. Nikita passed and Neha failed
3. both passed in exam

Required probability
$$= \frac{2}{3} \times \left(1 - \frac{3}{4}\right) + \left(1 - \frac{2}{3}\right) \times \frac{3}{4} + \frac{2}{3} \times \frac{3}{4}$$
$$= \frac{11}{12}$$

S15. Ans.(a)
Sol.
Required Probability
$$= \left(\frac{^3C_1}{^7C_1} + \frac{^4C_1}{^7C_1}\right) \times \frac{1}{2}$$
$$= \frac{1}{2}$$