Date : 24th Dec 2023 | Quantitative Aptitude - Probability | English

**Q:1** One letter from the word 'Apples' is picked at random and one letter from the word 'Clap' is picked at random. What is the probability that the letters picked from both words are same?
**1.** 1/6
**2.** 1/4
**3.** 1/3
**5.** 5/6

**Q:2** There are 8 blue, 5 yellow, and 7 red balls. What is the probability of choosing either 1 yellow or 1 red ball?
**1.** 2/3
**2.** 3/4
**3.** 4/5
**5.** 1/2

**Q:3** In a class of 10 students there are 6 boys and 4 girls. 3 of the students scored full marks in the test. Find the probability that out of these three students 1 is a boy and 2 are girls?
**1.** 3/10
**2.** 3/8
**3.** 5/21
**5.** 3/22

**Q:4** Number of coins of Rs. 1, Rs. 2 and Rs. 5 in a bag are 5, 3 and 2. If 4 coins are drawn from the bag at random then what is the probability that total value of those coins will be less than Rs. 11?
**1.** 4/105
**2.** 5/11
**3.** 8/11
**5.** 1/30

**Q:5** A piggy bank contains one hundred and five '50 paise' coins, fifty 'Rs. 1' coins, twenty 'Rs. 2' coins and ten 'Rs. 5' coins. If one coin from the piggy bank is withdrawn at random then find the probability of getting a coin of value more than Rs. 2.
**1.** 2/37
**2.** 4/37
**3.** 37/2
**5.** 32/180

**Q:6** A bag contains 5 rupees coins, 2 rupees coins and 10 rupees coins. If 2 coins are drawn out of the bag randomly, what is the probability the sum of the 2 coins is Rs 4?
**1.** 1/11
**2.** 10/11
**3.** 5/11
**5.** None of these

**Q:7** A bag contains 4 dice, 5 coins and 6 balls. Ram took 2 items out from the bag, what is the probability of both items being dice?
**1.** 2/35
**2.** 2/17
**3.** 7/34
**5.** 3/31

**Q:8** Tulika hits a target 3 times in 6 shots. Sachi can hit the target 2 times in 6 shots and Lalini can hit the target 4 times in 4 shots. What is the probability that at least 2 shots hit the target?
**1.** 2/3
**2.** 1/3
**3.** 1/2
**5.** none of these

**Q:9** Kishan and Bhavya appear in an interview for a vacancy. The probability of Kishan's selection is 1/8 and that of Bhavya's selection is 1/9. What is the probability that only one of them will be selected?
**1.** 12/13
**2.** 4/25
**3.** 5/24
**5.** 11/23

**Q:10** Find the probability of selecting 2 vowels (Repetition not allowed) from the given word 'PALAEONTOLOGY'.
**1.** 5/13
**2.** 7/22
**3.** 9/43
**5.** 5/39



Asutosh Mukherjee Road, College Para, Hathi More, Siliguri, West Bengal
+91 - 8436586516, +91-8436900456
thedhronas@gmail.com
thedronas.com

## Answer Key

| | | | | |
|---|---|---|---|---|
| **1.** (1) | **2.** (4) | **3.** (1) | **4.** (4) | **5.** (1) |
| **6.** (1) | **7.** (1) | **8.** (1) | **9.** (3) | **10.** (5) |

## Answers and Solutions

**Q:1** The correct answer is **Option 1** i.e. **1/6.**
In both the words 'a', 'p' and 'l' are common letters.
Probability of picking 'a' from both words = 1/6 × 1/4 = 1/24
Probability of picking 'p' from both words = 2/6 × 1/4 = 2/24
Probability of picking 'l' from both words = 1/6 × 1/4 = 1/24
Required probability = 1/24 + 2/24 + 1/24 = 4/24 = 1/6

**Q:2** The correct answer is **Option 4** i.e. **3/5**
Given:
8 blue, 5 yellow, and 7 red balls.
Probability of choosing either 1 yellow or 1 red ball = (7 + 5)/(8 + 7 + 5)
⇒ 12/20
⇒ 3/5

**Q:3** The correct answer is Option 1 i.e. 3/10
Ways of selecting 3 students out of 10 students = $^{10}C_3$
Ways of selecting 1 boy = $^{6}C_1$
Ways of selecting 2 girls = $^{4}C_2$
Probability = $[^{6}C_1 \times {}^{4}C_2]/{}^{10}C_3$
Probability = 3/10

**Q:4** The correct answer is **option 4** i.e. **7/11**
Number of coins of Rs. 1, Rs. 2 and Rs. 5 in a bag are 5, 3 and 2
So, Total of different cases and total value:
1 + 1 + 1 + 1 = Rs. 4
1 + 1 + 1 + 2 = Rs. 5
1 + 1 + 2 + 2 = Rs. 6
1 + 2 + 2 + 2 = Rs. 7
1 + 1 + 1 + 5 = Rs. 8
1 + 1 + 2 + 5 = Rs. 9
1 + 2 + 2 + 5 = Rs. 10
2 + 2 + 2 + 5 = Rs. 11
1 + 1 + 5 + 5 = Rs. 12
1 + 2 + 5 + 5 = Rs. 13
2 + 2 + 5 + 5 = Rs. 14
Hence, Total cases = 11
Cases in which total value of 4 coins will be less than Rs. 11 = 7
Hence, Required probability = 7/11

**Q:5** The correct answer is **option 1** i.e. **2/37**
Total number of coins in the piggy bank is 185.
No. of coins with value greater than Rs 2 in a piggy bank is 10.
Let E be the event of drawing a coin from piggy,
We know that,
P(E) = (No. of favorable outcomes)/(Total no. of possible outcomes) = 10/185 = 2/37

**Q:6** The correct answer is **option 1** i.e. **1/11**
The only possibilty of the sum to be Rs 4 is when 2 coins of Rs 2 are drawn out.
Therefore all outcomes = $^{12}C_2$
Favorouble outcomes = $^{4}C_2$
Probability (coins drawn out are Rs 2 coins) = $^{4}C_2$ / $^{12}C_2$
⇒ 6/66 = 1/11

**Q:7** The correct answer is **option 1** i.e. **2/35**
Probability of getting 2 dices from above bag:
4/(4 + 5 +6) × 3/(3 + 5 + 6)
⇒ 4/15 × 3/14
⇒ 2/35

**Q:8** The correct answer is **Option 1** i.e. **2/3**
Probability that Tulika can hit the target = 3/6 = 1/2 = P(T)
Probability that Tulika can't hit the target = 1 - 1/2 = 1/2 = P(T')
Probability that Lalini can hit the target = 4/4 = 1 = P(L)
Probability that Lalini can't hit the target = 1 - 1 = 0 = P(L')
Probability that Sachi can hit the target = 2/6 = 1/3 = P(S)
Probability that Sachi can't hit the target = 1 - 1/3 = 2/3 = P(S')



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Required probability at least 2 shorts hit target = P(T)P(L)P(S') + P(T)P(L')P(S) + P(T')P(L)P(S) + P(T)P(L)P(S) = ((1/2) × 1 × (2/3)) + ((1/2) × 0 × (1/3)) + ((1/2) × 1 × (1/3)) + ((1/2) × 1 × (1/3)) = 1/3 + 1/6 + 1/6 = 4/6 = 2/3

**Q:9** The correct answer is **option 3** i.e. **5/24**.

In the above case, one of them will be selected only if the other one is rejected, thus

Probability that Kishan is selected = Probability of Kishan's selection × Probability that Bhavya is not selected = 1/8 × (1 - 1/9) = 1/9

Probability that Bhavya is selected = Probability of Bhavya's selection × Probability that Kishan is not selected = 1/9 × (1 - 1/8) = 7/72

Probability that one of them will be selected = 1/9 + 7/72 = 15/72 = 5/24

**Q:10** The correct answer is **option 5** i.e. **5/39**

Total number of letters = 13

Total number of vowels = 5

Number of ways of selecting 2 vowels out of 5 = $^5C_2$

Number of ways of selecting 2 letters out of 13 = $^{13}C_2$

Required Probability = $^5C_2/^{13}C_2$ = 5/39



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