RISE UP अकॅडमी

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इयत्ता : 5 वी ते 10 वी

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Class: 10 English / Semi-English (State)   Subject : Algebra   Total Marks: 20

Date: Chapter: Probability   Time: 1 Hr

10th Algebra 20 Marks

Q.1) A) Choose the correct alternative for the following questions   [02]

1) What is the probability of the event that a number chosen from 1 to 100 is a prime number?

a) $\frac{1}{5}$ b) $\frac{6}{25}$ c) $\frac{1}{4}$ d) $\frac{13}{50}$

2) There are 40 cards in a bag. Each bears from a number from 1 to 40. One card is drawn at random. What is the probability that the card bears a number which is a multiple of 5?

a) $\frac{1}{5}$ b) $\frac{3}{5}$ c) $\frac{4}{5}$ d) $\frac{1}{3}$

Q.1) B) Solve the following questions   [01]

1) A = {1, 2, 3, 4, 5}, S = {1, 2, 3, -----, 10} then P(A) = ?

Q.2) A) Complete any one activity   [02]

1) A card is drawn from a well shuffled pack of 52 playing cards. Find the probability of the event, the card drawn is a red card.

Suppose 'S' is sample space.   ∴ n(S) = 52

Event A: Card drawn is a red card.   ∴ Total red card = □ hearts + 13 diamonds,   n(A) = □   ∴ P(A) = □,

2) Form a 'committee' of two, from 3 men (M_1, M_2, M_3) and 2 women (W_1, W_2). Complete the following activity to write the sample space.

i) Committee of two men = {□, □,□}   ii) Committee of two women = {-------}

iii) Committee of one man and one women = {M_1W_1, -------- }   iv) Sample space = {--, --, --, --, --, --, --, --, --, --}

Q.2) B) Solve any One sub question   [02]

1) The faces of a die bears numbers 0, 1, 2, 3, 4, 5. If the die is rolled twice, then find the probability that the product of digits on the upper face is zero.

2) Joseph kept 26 cards in a cap, bearing one English alphabet on each card. One card is drawn at random. What is the probability that the card drawn is a vowel card?

Q.3) A) Complete any One activity   [03]

1) A card is drawn from well shuffled pack of 52 playing cards. Complete the activity to find the probability of the event that the card drawn is a red card.

'S' is the sample space.   ∴ n(S) = 52

Event A: Card drawn is a red card   Total number of red cards = ☐ hearts + ☐ diamonds

∴ n(A) = ☐   P(A) = ☐/n(S) = ☐

2) A two- digit number is formed with digits 1, 3, 5, 7, 9 without repetition. What is the probability that the number formed is : i) an even number   ii) A multiple of 3

Sample Space (S) = {------------},   ∴ n(S) = ☐

i) Let A be the event that the number formed is an even number.   ∴ A = ☐   and n(A) = ☐ ,   ∴ P(A) = ☐

ii) Let B bet the event that the number formed is a multiple of 3.   ∴ B = ☐   and n(B) = ☐ ,   ∴ P(B) = ☐

Q.3) B) Solve any One sub questions   [03]

1) Write sample space 'S' and number of sample points n(S) for each of the given experiment. Also write A, B, C in the set form and write n(A), n(B), n(C) : Two digit numbers are formed using digits 0, 1, 2, 3, 4, 5 without repetition of the digits.   Event A : The number formed is even   Event B : The number formed is divisible by 3

Event C : The number formed is greater than 50

2) rite sample space 'S' and number of sample points n(S) for each of the given experiment. Also write A, B, C in the set form and write n(A), n(B), n(C) : From three men and two women, environment committee of two persons is to be formed.   Event A : There must be at least one women member   Event B : One man, one women committee to be formed

Event C : There should not be a women member

Q.4) Solve any One sub questions   [04]

1) Two dice are rolled, write the sample space 'S' and number of sample points n(S). Also write events and number of sample points in the event according to the given condition.
 i) Sum of the digits on upper face is a prime number   ii) Sum of the digits on the upper face is multiple of 5.

iii) Sum of the digits on the upper face is 25.   iv) Digit on the upper face of the first die is less than the digit on the second die.

2) A sanitation committee of 2 members is to be formed from 3 boys and 2 girls. Write sample space 'S' and number of sample points n(S). Also write the following events in set form and number of sample points in the event. i) Event A : at least one girl must be a member of the committee.   ii) Event B : Committee must be of one boy and one girl

iii) Event C : Committee must be of boys only   iv) Event D : At the most one girl should be a member of the committee.

Q.5) Solve any One sub question   [03]

1) A card is drawn from a well shuffled pack of 52 playing cards. Find the probability of each event. The card drawn is   i) a red card   ii) a face card

2) A box contains 5 strawberry chocolates, 6 coffee chocolates and 2 peppermint chocolates. Find the probability of each of the following events, if one of the chocolates is picked from the box at random. i) it is a coffee chocolate   ii) it is a peppermint chocolate.