



Short Questions

- Q.6.01. State additional Rule of probability?
- Q.6.02. How many permutations can be formed out of the letters of the word "MISSISSIPPI"?
- Q.6.03. A pair of dice is rolled. Make the sample space and calculate the probability that the sum of dots is at least 9?
- Q.6.04. Make permutations of A, B, C, D.
- Q.6.05. Define the terms:
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|-----------------------------|--------------------------------|
| (i) Event | (ii) Mutually Exclusive Events |
| (iii) Equally likely Events | (iv) Sample Space |
- Q.6.06. Evaluate the following:
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|----------------------|------------------------------------|--------------------------------------|---|
| (i) $\binom{52}{13}$ | (ii) $\binom{48}{10} \binom{4}{3}$ | (iii) $\binom{39}{13} \binom{13}{4}$ | (iv) $\binom{7}{2} \binom{3}{2} \binom{4}{1}$ |
|----------------------|------------------------------------|--------------------------------------|---|
- Q.6.07. Distinguish between independent and dependent events.
- Q.6.08. Evaluate the following:
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| (i) ${}^{10}P_3$ | (ii) ${}^{52}P_{13}$ | (iii) ${}^{10}P_{4,2,3,1}$ |
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- Q.6.09. A pair of dice is rolled. Make the sample space and calculate the probability that the sum of dots is at least 8?
- Q.6.10. Define with examples;
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| (i) Set | (ii) Null set | (iii) Sub-set |
| (iv) Universal set | (v) Equal sets | |
- Q.6.11. What is experiment and random experiment?
- Q.6.12. A card is drawn at random from a pack of 52 cards. Find the probability of obtaining:
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| (i) Red Card | (ii) King of Spade |
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**Exercise****Long Questions**

- Q.6.01. Two dice are rolled find the probability that the sum of dots is:
- (i) Exactly 3
 - (ii) Odd
 - (iii) More than 9
 - (iv) More than 5 but less than or equal to 10
 - (v) At least 7
 - (vi) At most 6
- Q.6.02. State and prove additional Rule of probability for not mutually exclusive events?
- Q.6.03. A card is drawn at random from an ordinary pack of 52 playing cards. Find the probability that the card:
- (a) Is a seven
 - (b) Is not a seven
- Q.6.04. A card is drawn at random from an ordinary pack of 52 cards, find the probability that the card is:
- 1) A club or a diamond
 - 2) A club or a king
- Q.6.05. Two dice are rolled find the conditional probability of getting the sum of dots is "7" given that:
- (i) The sum is 6 or more
 - (ii) The sum is Less than 9
 - (iii) The sum is More than 5
- Q.6.06. In a college 30% students failed English, 40% students failed Urdu and 10% students failed both. A student is selected at random. What is the probability that he failed English or Urdu?
- Q.6.07. What is probability of getting sum of dots as 14, when 3 fair dice are rolled?
- Q.6.08. A bag contains 16 balls of which 5 are marked. If 8 balls are drawn out together, what is the probability that all the marked balls are among 8 balls?