

# INTRODUCTION TO QT

1. Explain the limitations of QT?
2. Explain the importance of QT in business, industry and management?
3. Name the classifications of QT?
4. Write the application of QT in business?
5. Define QT?
6. What are the major types of QT used in business. Explain?
7. Discuss important operations research techniques used in business?
8. PERT is .....?
9. CPM=.....?
10. What is SQC?
11. What are the functions of QT
12. What you mean by linear programming?
13. .... analysis help to understand how the value of the dependent variable changes when any one of the independent variable is variate.
14. Explain the nature, scope and extent of application of QT in economics and commerce?

**EDU FACTORY**

CENTRE FOR INDIVIDUAL TUITION

BYE PASS ROAD JUNCTION, EDAVANNAPPARA  
AIR PORT ROAD, IRUPPENTHODY  
+91 9946 254045,edufactoryedp@gmail.com

Subject offered:

- # Basic Numerical Skills
- # Quantitative Techniques
- # Advanced Financial, Cost Accounting
- # Advanced Corporate & Management Accounting
- # Tax Accounting
- # International Financial Reporting Standards
- # Operation Research / Management Science
- # Financial Management
- # Research Methodology
- # Financial Derivatives
- # Investment & Portfolio Management
  
- # +2 Accountancy (AFS / Tally)
- # +1 Accountancy
  
- # 8, 9, SSLC Mathematics

# PROBABILITY THEORY

- What is sample space?
- What is conditional probability?
- A basket contains 20 bad oranges and 80 good oranges. Three oranges are drawn at random from the basket. Find probability that of three
  - atleast 2 good oranges
  - utmost 2 are good oranges?
- A person is known to hit the target in 3 out of 4 shots, whereas another person is known to hit the target in 2 out of 3 shots. Find the probability of the target being hit at all when they both try.
- Define probability?
- What you meant by 'equally likely events'?
- Two unbiased dice are thrown. Find the probability that:
  - Both the die show the same number
  - One die shows 5
  - First die shows 5
  - Total of the number of the dice is 8
- $P(A/B)$  is equal to:
  - $\frac{P(A \cap B)}{P(A)}$
  - $\frac{P(A \cap B)}{P(B)}$
  - $\frac{P(A \cup B)}{P(A)}$
  - $\frac{P(A \cup B)}{P(B)}$
- If one events prevents the occurrence of another event, then the two events are said to be ..... events?
- Distinguish between priory probability and posteriori probability?
- Given that  $P(A)=3/14$  ;  $P(B)=1/6$  ;  $P(C)=1/3$  ;  $P(A \text{ and } C)=1/7$  and  $P(B/C)=5/21$ . Find the following probabilities:
  - $P(A/C)$
  - $P(C/A)$
  - $P(B \text{ and } C)$
  - $P(C/B)$
- A box contains 10 bad apples and 40 good apples. Three apples are drawn at random from the box. Determine probability that:
  - Atleast one is good
  - Utmost 2 are good
- What do you understand the term probability
  - State the addition theorem and multiplication theorem of probability
  - Explain Baye's theorem
- The probability of sample space:
  - 0
  - 1
  - 0.5
  - 0.33
- ..... is the distribution of rare events?
- Probability of getting atleast one head in tossing two coins is .....
- Given A and B are independent events with  $P(A)=1/3$  and  $P(B)=1/4$ . Find  $P(A \cup B)$
- Distinguish sample space and events?
- Define classical probability?
- A sub committee of 6 members is to be formed out of a group consisting 7 men and 4 women. Obtain the probability that the subcommittee will consist of :
  - Exactly 2 women
  - Atleast 2 women
- Define conditional probability. What is the effect of independence in conditional probability?
- John has 15 pairs of socks on a drawer of which 5 are red, 4 are brown and 6 are white. Pairs of the same colour are indistinguishable. 2 red pair and 1 white pair are unwearable because of holes in toe. He selects a pair of socks from drawer and note that it is red. What is the probability that it has holes in the toe.
- The quantitative expression of likelihood of an event is termed as .....
- If two events are A and B, then it is written as:
  - $A \cup B$
  - $A \cap B$
  - $A/B$
  - $\bar{A} \cap \bar{B}$
- Two events are said to be mutually exclusive, when
  - Both of them can occur
  - Only one can occur
  - None can occur
  - None of these
- When are two events called independent?
- The odds against A solving problem in statistics are 8 to 6 and odds in favour of B solving problems are 14 to 16. What is the probability that
  - the problem is solved
  - the problem is not solved
- A die is thrown. Find the probability of getting
  - An even number
  - Number 3
  - 1 or 5
  - Number less than three
- The outcome of a random experiment is called:
- The value of probability lie between :
  - 0 and -  $\alpha$
  - 0 and 1
  - Greater than 1
  - None of these
- The set of all the sample points of a random experiment is called .....
- What do you mean by combination?
- State additional theorem of probability
- A committee of 5 is to be formed from a group of 8 boys and 7 girls. Find the probability that the committee consists of
  - 3 boys and 2 girls
  - atleast one girl
- The probability of a batsman score a century in cricket match is  $1/3$ . Find the probability that out of 5 matches he score century in
  - Exact 2 matches
  - No matches

36. Three persons X,Y and Z are simultaneously shooting at a target. Probability of X hitting the target is  $\frac{1}{2}$ , Y hitting the target is  $\frac{1}{4}$  and that of Z hitting is  $\frac{2}{3}$ . Find the probability

(a) exactly one of them will hit the target

(b) atleast one of them will hit the target

37. State the additional rule for (a) Mutually exclusive events (b) Non mutually exclusive events .Give one example of each.

38. A bag contains 8 balls, identical except for colour of which 5 are red and 3 white. A man draws two balls at random one after another without replacement. What is the probability that one of the balls drawn is white and other red? What would be the value of those probabilities if the balls drawn are replaced before the other ball is drawn.

39. If  $P(A) = \frac{1}{4}$ ,  $P(B) = \frac{1}{3}$  and  $P(A \cup B) = \frac{1}{2}$ .

Calculate

(a)  $P(A \cap B)$  (b)  $P(A \cap \bar{B})$  (c)  $P(\bar{A} \cap \bar{B})$

40. An event in probability is

(a) Actual outcome (b) Expected outcome

(c) Random outcome (d) Possible outcome

41. Two coins tossed simultaneously, probability of getting atleast one head is .....

42. Distinguish dependent and independent events

43. A fair coin is tossed, find chance of getting three heads

44. The probability that a contractor will get a plumbing contract is  $\frac{2}{3}$  and the probability that he will not get an electric contract is  $\frac{5}{9}$ . If the probability of getting atleast one contract is  $\frac{4}{5}$ . What is the probability that he will get both the contract.

45. State and prove additional theorem for two events. Deduce the result for three events.

46. A urn A contains 2 white and 4 black balls.

Another urn B contains 5 white and 7 black

balls. A ball is transferred from the urn A to urn B.

Then a ball is drawn from urn B. Find the

probability that it will be white.