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Program: BBA 37th

Course title: Business Statistics (STA220)

Ans. to the Q.NO 1

a) Sampling Distribution : A sampling distributi is a probability distribution of a statistic obtained from a largete number of ~~sm~~ samples drawn from a specific population

b) Population distribution: population distribution means the patteren of where people live. world population distribution is uneven. Places which ate sparsely populated contain few people. population distribution is the probability distribution of the population data.

c) Sampling Error: Sampling Error is the different between the value of a sample statistic and the value of the correspond- population parameter. In the case of the mean.

$$\text{sampling error} = \bar{x} - \mu$$

assuming that the sample is random and no nonsampling error has been made.

d) Nonsampling Errors: The errors that occurs in the collection, recording, and tabulation of data are called nonsampling errors.

Ans to the Q. NO 2.

The binomial probability distribution is one of the most widely used discrete probability distributions. Example: if an experiment is defined as one toss of coin and this experiment is repeated 10 times, then each repetition (toss) is called a trial. Consequently there are 10 total trials for this experiment conditions of a Binomial Experiment: A binomial experiment must satisfy the following four conditions.

I) There are n identical trials.

II) Each trials has only two possible outcomes.

III) The probabilities of the two outcomes remain constant.

IV) The trials are independent.

Ans to the Q.NO 3

Union of Events: The union of events A and B, denoted AUB, is the collection of all outcomes that are elements of one or the other of the sets A and B, or of both of them. Example: If A = {1,2,3} and B = {2,3,4} then AUB = {1,2,3,4}.

Discuss about union of Events:

I) The union of two set is defined as the set of all elements that belong to either A or B, or possibly both.

II) the union two set is represented by U.

III) It corresponds to the logical OR.

IV) Suppose:

A = a cat has two door

B= a car is red

Then, If we randomly select a car from a large parking lot, P(AUB) is the probability that the car is either a two door model or red or both two-door and red.

Example 2: If [A∩B] = 75, [A] = 143 and [B] = 173, find [AUB]

Solution:

$$[A \cup B] = [A] + [B] - [A \cap B]$$

$$= 143 + 173 - 75$$

$$= 241$$

Use the formula for the union of two events.

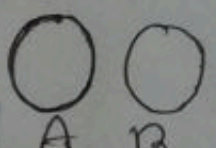
Ans. to the Q NO: 4

Intersection of events: The intersection of events A and B, denoted by, consists of all outcomes that are both A and B.

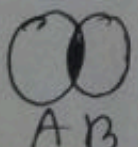
for independent events, the probability of the intersection of two or more events is the product of the probabilities.

In the case of two coin flips, the ~~example~~ probability of observing two heads is 1/2 * 1/2 = 1/4.

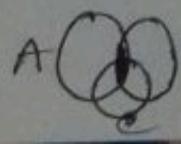
Intersection of sets:



$= A \cap B$



$= A \cap B$



$= A \cap B \cap C$