

Paper: Quantitative Techniques for Manager.

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Q1: Fill in the following statements.

- 1) Parametric data is the word which use to measure Quantitative and Qualitative research.
- 2) Figures belongs with quantitative data.
- 3) Attributive study of data belongs with information used to create chart.
- 4) Classification/categorization is the process which separate data in homogeneous groups.
- 5). The field which depends upon the utilization of human resource in data management is called HRM.
- 6) The grading source of students belong with quantitative measurement scale.
- 7) Today's temperature was recorded at 32°F , lies in the category of quantitative measurement scale.
- 8) Attribute data has very limited usage in Advance research studies (F).
- 9) Number of dots in a single line is very good example of countable data (TI)
- 10) Qualitative data do not belong with the field of statistics (TI).

Q2

a) Describe the Relevant field and Branches of Data Management.

Defination: Data management is a broad field of study but essentially is the process of managing data as a resource that is valuable to an organization.

Data management can also be the development and execution and architecture, policies, practice and procedure in order to manage the information life cycle need of an enterprises in effective manner.

Branches of Data Management:

- 1) Data Warehousing: is storing data effectively so that it can be accessed and used efficiently in future.
- 2) Data Movement: is the ability to move data from one place to another. For instance data need to be moved from where it is collected to a data base and then to an end user.
- 3) Data Administration: It extremely important in managing data. every organization or enterprise need data administrators for the data base environment.
- 4) Ware Housing: A data warehousing (DW) is process for collecting and managing data from varied sources to provide meaningful business insights.

5) Transformation: Data transformation is the process of converting data from one format to another, typically from the format of a source system into the required format of a destination system.

6) Governance: How data is accessed and treated within a broader data management strategy. Data management is the implementation of architecture tool and processes to achieve stated data governance objectives.

7) Architecture: Is the process of defining and maintaining specification that express strategic data requirements, outline high level integrated object to meet these requirements.

Q2(b): How could you elaborate the "Importance and Application of quantitative study in Management" in business life?

Ans: Quantitative techniques provide solutions to almost every area of a business. These can be used in production, marketing, inventory, finance and other areas to find answer to various question like how the resources should be used in production so that profits are maximized. Quantitative methods have found wide application in project management.

(a)(i) Q3
Possible outcome for 3 dice?

The Probability experiment of rolling three dice has $6^3 = 216$ outcomes.

Possible outcomes for 5 coins?

Multiply the number of choices for each coin flip and we get $2 \times 2 \times 2 \times 2 \times 2$ or $2^5 = 32$.

(ii).

$${}^3P_1 \times {}^7P_1 \times {}^2P_1$$

$$= \frac{3!}{2!} \times \frac{7!}{6!} \times \frac{2!}{1!}$$

$$= \frac{3 \times 2 \times 1}{2 \times 1} \times \frac{7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1}{6 \times 5 \times 4 \times 3 \times 2 \times 1} \times \frac{2 \times 1}{1 \times 1}$$

$$= 3 \times 7 \times 2 = 42.$$

Q3

b)

(iii) How many arrangements are could be possible for the word Probability and statistics?

Solution:

Arrangement for "statistics"

$$nPr = \frac{n!}{(n_1! n_2! \dots n_k!)}$$

Total number of ~~words~~ alphabets (n) and subsets (n₁, n₂, ..., n_k) in word statistics

Subset: s = 3

T = 3

A = 1

I = 2

C = 1

$$n_1(s) = 3, n_2(T) = 3, n_3(A) = 1, n_4(I) = 2; n_5(C) = 1$$

$$\Rightarrow \frac{10!}{(3! 3! 1! 2! 1!)}$$

$$\Rightarrow \frac{10 \times 9 \times 8 \times 7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1}{\{(3 \times 2 \times 1)(3 \times 2 \times 1)(1)(2 \times 1)(1)\}}$$

$$\Rightarrow \frac{3628800}{72}$$

$$\Rightarrow 50400$$

In 50400 way statistic can be arranged.

Q3.

(ii) There are three members (principal, headmaster & clerk)
How many arrangement could be possible for these during selection?

Solution:

$$\frac{n!}{r!(n-r)!}$$

$$= \frac{3!}{3!(3-3)!} = \frac{3!}{3!(0)}$$

$$= 3! = 3 \times 2 \times 1 = 6$$

Arrangement can be possible for during selection is 6.

(i) There are 7 people standing in a line. How many ways to construct a line with 7 people?

Solution:

$$\frac{n!}{r!(n-r)!}$$

$$= \frac{7!}{7!(7-7)!} = \frac{7!}{7!(7!-7!)}$$

$$= \frac{7!}{7!(0)} = 7! = 7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1 = 5040$$

In 5040 ways to construct a line with 7 people.