

ANALYTICAL TOOLS

- **Analytical Tools** includes but is not limited to any methodology, statistical methods, formulae or other methods or tools used by Researcher in conducting the Analysis.

Housekeeping Rules

Bathroom Location(s)

Tools: Pencil/Pens/calculator

Cellphones

Phones on silent or buzz (Please take important calls outside of the session)

One person talking at a time

Questions can be asked during breaks or at the end of the session

Respect other people's contribution

2 Please respect everyone's opinion/perspective

AGENDA

OPERATIONS RESEARCH:

- DEFINING OPERATIONS RESEARCH
- OFFICE ORGANIZATION
- JOB ANALYSIS
- SYSTEMS AND PROCEDURES
- OFFICE WORK SIMPLIFICATION
- PLANNED CHANGE AND ORGANIZATIONAL DEVELOPMENT

DEFINING OPERATIONS RESEARCH

- Operations research (OR) is an analytical method of problem-solving and decision-making that is useful in the management of organizations. In operations research, problems are broken down into basic components and then solved in defined steps by mathematical analysis.

OFFICE ORGANIZATION

- ORGANIZATIONAL CHART
- TYPES OF RELATIONSHIPS
- ORGANIZATIONAL STRUCTURE
- TRADITIONAL STRUCTURES
- MATRIX STRUCTURE
- CENTRALIZATION
- DECENTRALIZATION

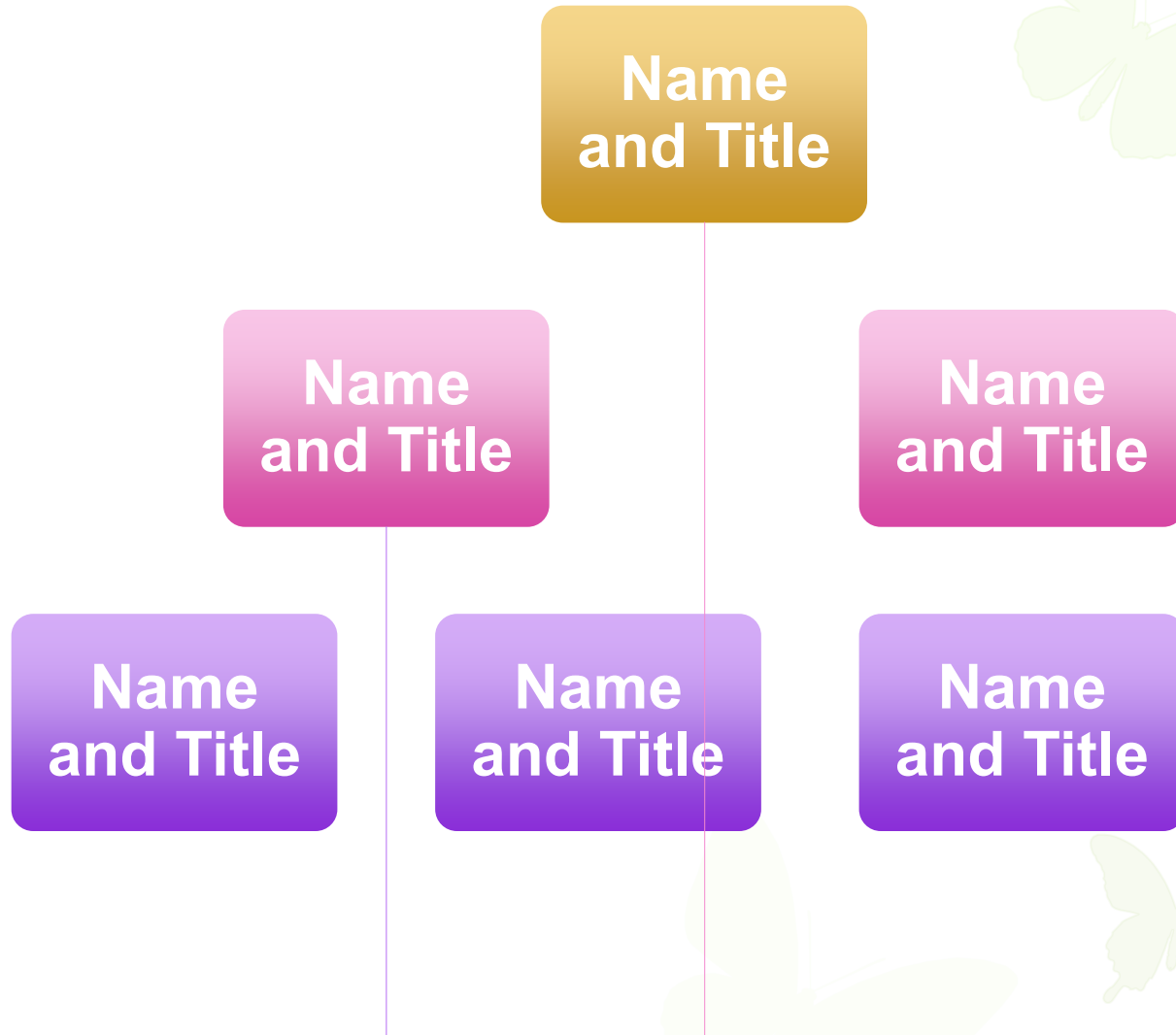
ORGANIZATIONAL CHART

A chart which represents the structure of an organization in terms of rank.

It shows the managers and subordinate staff who make up an organization.

The branches on the organization chart show the relationships between managers and departments, if any.

ORGANIZATIONAL CHART



TYPES OF RELATIONSHIPS

- LINE- direct relationship between superiors and subordinates
- LATERAL – 2 employees in same organization with same level title
- STAFF – the elements of the organization which help the line work effectively
- FUNCTIONAL-Relationship between staff whose duties overlap with others.

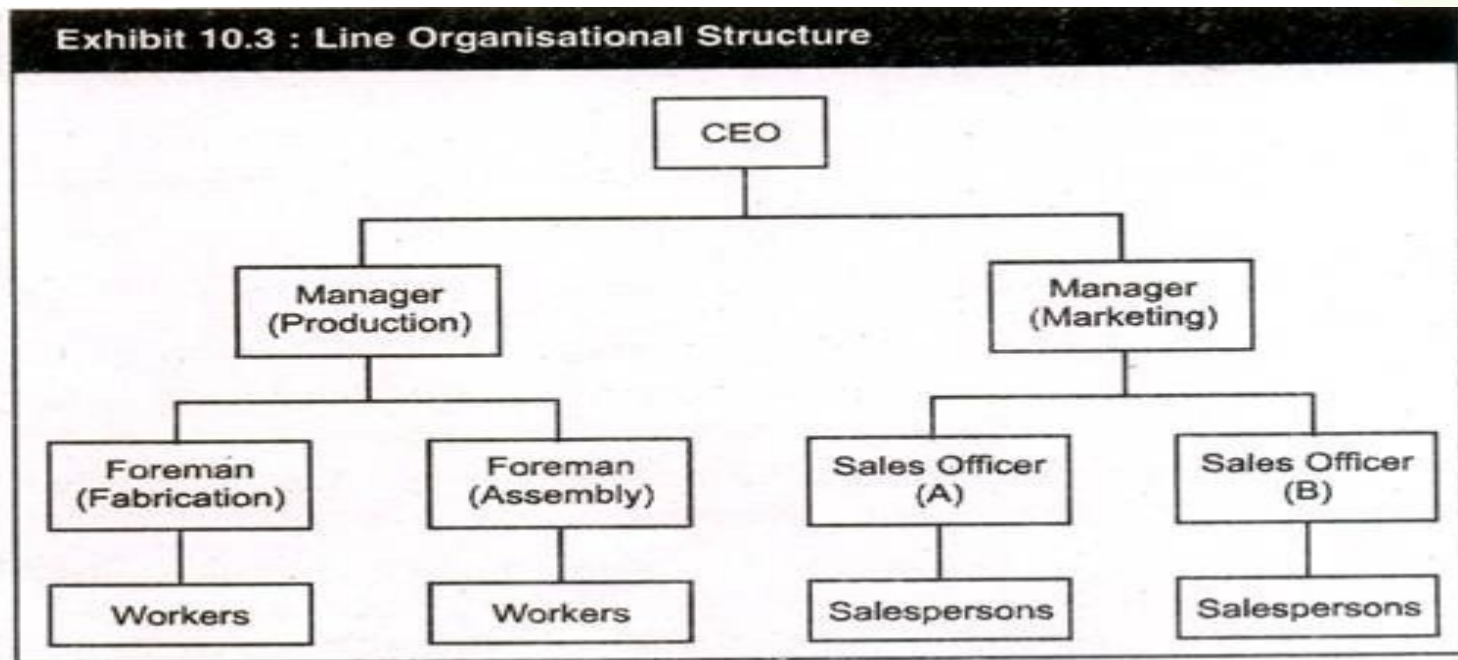
ORGANIZATIONAL STRUCTURE

The plan for the systematic arrangement of work is the organization structure.

It is comprised of functions, relationships, responsibilities, authorities, and communications of individuals within each department.

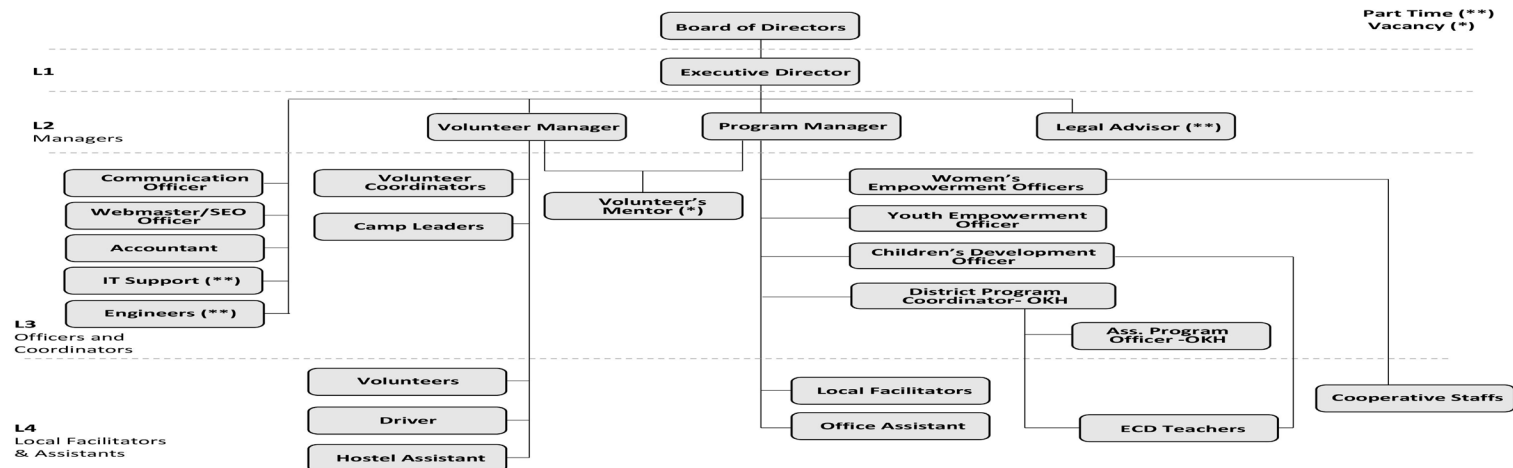
TRADITIONAL STRUCTURE

- Line Structure
- Line and Staff Structure



MATRIX STRUCTURE

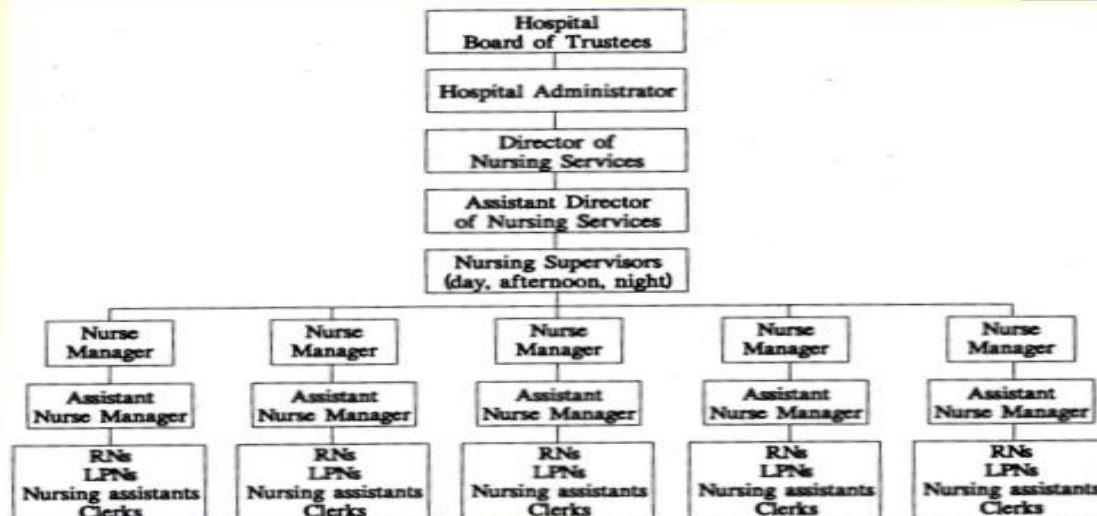
- A variation of the line and staff organizational structure.
- Organization is arranged according to projects.



CENTRALIZATION

- Organizations with a centralized structure have several layers of management.
- Control the company by maintaining a high level of authority.
- Focus on top-down management.

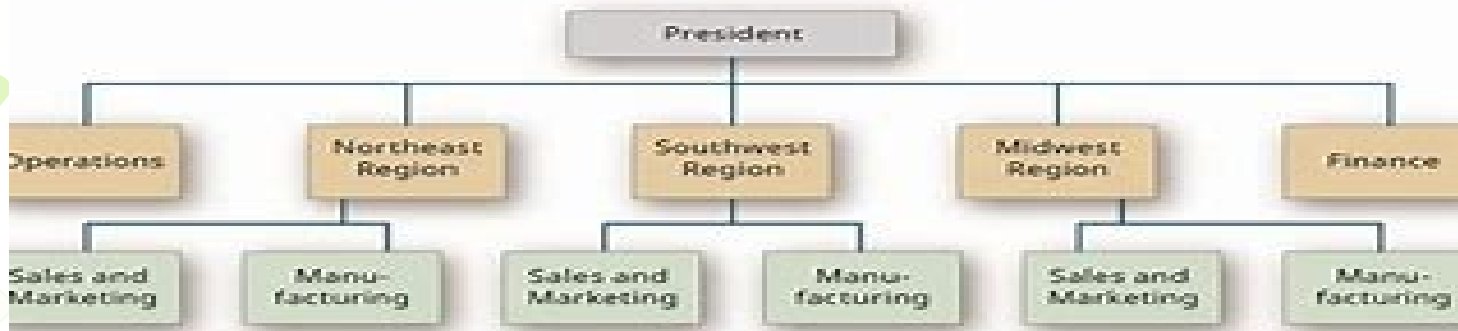
Centralized Organization



DECENTRALIZATION

- Seeks to eliminate the unnecessary levels of management and to place authority in the hands of front-line managers and staff.
- Increases the span of control.
- Employees report to one manager.
- Restructuring takes place at mid-management.

DECENTRALIZED ORGANIZATIONAL CHART



WHAT IS JOB ANALYSIS?

The process of identifying the content of a job to determine the duties inherent in the position as well as the qualifications needed to fulfill its responsibilities.

HOW IS JOB ANALYSIS USED?

In Human Resources , JOB ANALYSIS is used to gather information for use in:

- Personnel Selection
- Training
- Classification
- Compensation

JOB ANALYSIS METHODS

- Interviews with workers
- Questionnaires
- Observation
- Gathering background information

Methods of Job Analysis

• Interview Method

– Individual

- Several workers are interviewed individually
- The answers are consolidated into a single job analysis

– Group

- Employees are interviewed simultaneously
- Group conflict may cause this method to be ineffective

JOB ANALYSIS RESULTS

- Job analysis can result in a description of common duties performed on a job as well as descriptions of knowledge, skills, abilities and other characteristics required to perform those tasks.

SYSTEMS AND PROCEDURES

- A system is made up of related procedures and in turn, a procedure is made up of related methods.
- The goal is to carry out specific work to achieve the objective

TOTAL SYSTEMS APPROACH

TEAMWORK AND COORDINATION
ASSISTING MANAGEMENT AT ALL LEVELS

METHOD

- DEFINITION:

- A **method** may be defined as the manner in which a clerical operation or task is performed.

- EXAMPLE:

The data on a form might be filled out electronically by **typing (mechanical)** or longhand using a **pen (manual)**.

PROCEDURE

- A **procedure** may be defined as a series or sequence of related operations, designed to standardize the performance of the various steps which make up a major operation. For example, classifying, coding, and sorting correspondence would be three different procedural units within the filing system of a company.

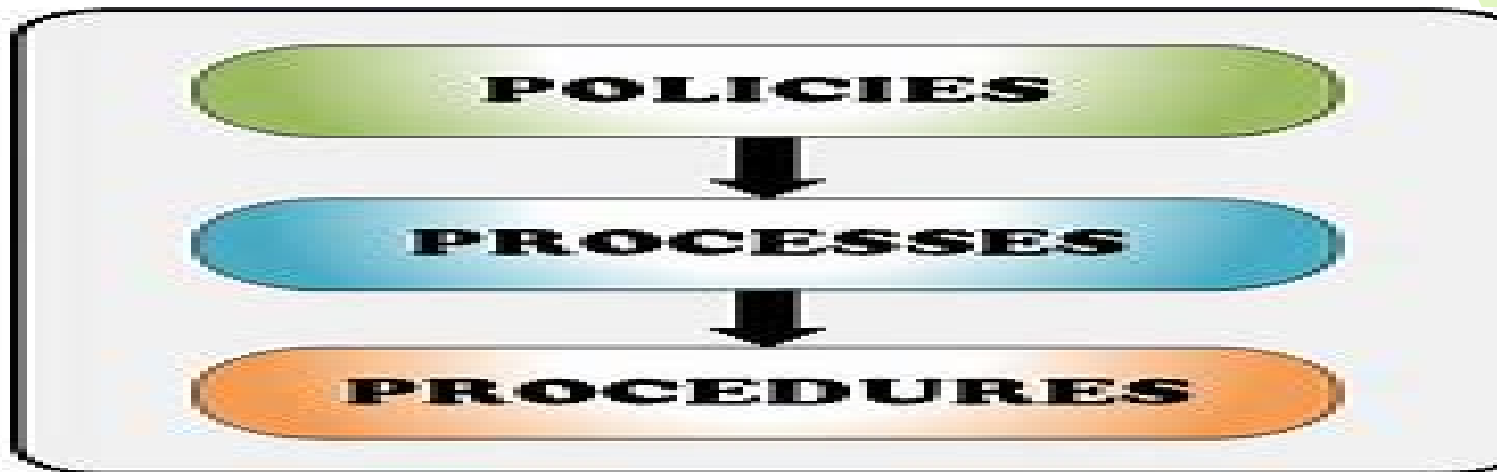
EXAMPLE:

Classifying, coding, and sorting correspondence would be three different procedural units within the filing system of a company.

SYSTEM

- DEFINITION:

- A **system** may be defined as a complex of related procedures designed to achieve major goals of the whole organization.



OFFICE WORK SIMPLIFICATION


A Scientific approach to studying the work processes with an eye towards making the process efficient and effective, raising productivity. It reduces duplication and waste, thereby by viewed as common sense.

GUIDES OF OFFICE WORK SIMPLIFICATION

- Promote “Participation with Know-How” by every office employee by means of training in and encouragement of the use of Work Simplification
- Make the series of activities Productive and Simple
- Combine work activities wherever possible to avoid recopying
- Reduce distances traveled to the shortest amounts feasible
- Arrange activities to provide a smooth flow from one clerical step to another

APPLYING OFFICE WORK SIMPLIFICATION

- Select work to be simplified
- Obtain all the facts about this work
- Devise improvement by analyzing these facts and using the questioning approach
- Apply the derived improved means



Organizational Change and Development

Organizational Structures

- Bureaucratic:
- 1) Specialization of labor
 - 2) Standardized work
 - 3) Centralization of Authority
 - 4) Emphasis on conformity
 - 5) High level of efficiency on repetitive tasks

Planned Change and Organizational Development

Objectives:

1. Examine the nature of change and analyze some of the forces making it necessary
- 2) Pinpoint the differences between haphazard and planned change
- 3) Itemize and explain commonly used strategies in implementing planned change
- 4) Define and analyze organizational development and show its relationship to planned change

Resistance to Change

1. Insecurity

- a) Automation may result in loss of jobs of front line workers in the name of efficiency.
- b) High level staff may fear losing their positions as a result of process changes.

2. Economic Reasons

- a) Reduced jobs, reduced hours mean reduced wages

3. Sociopathic Reasons

- a) People are programmed to accept traditional way of operating.

Case Study about resistance to change by Educators

1. Fear of unknown
2. Embrace status quo
3. No reason given for resisting change
4. Feels society will not accept change
5. Colleagues will not accept change so he will not either
6. An alternative idea was identified that they embrace
7. The teachers know what is best based on experience
8. The proposed idea failed before so it will not work
9. Through reasoning, though flawed, this idea will fail.

External Pressures for Change

- Technological advances (Y2K. Once year 2000 arrives, all computers will shut down since it is unknown how systems will react to 2 being the first digit in new year.)
- Introduction and removal of government regulations
- Changes in societal values
- Shifting political dynamics
- Changes in demographics

Planned Change

A process involving deliberate efforts to move an organization or a unit from its current undesirable state to a new, more desirable state.

Management generally serve as change agents to assist in overcoming resistance to change both from internal and external sources.

Emergence of the forces demanding change



Recognition of the need for change



Diagnosis of type of change required



Selection of Strategy for implementation

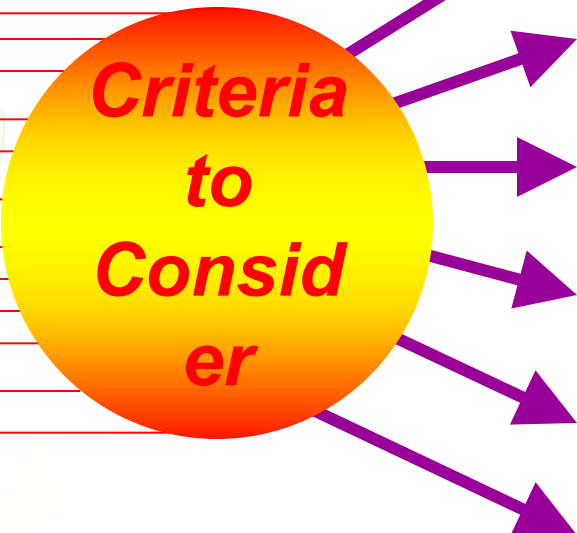


Intervention and overcoming resistance



Acceptance of Change

Speed of Change



***Criteria
to
Consider***

Urgency

Degree of support

Amount and complexity of change

Competitive environment

Knowledge and skills available

Financial and other resources

Style of Change

Non-participatory – top down, leaders design the change and plan its implementation. (Commissioners)

Participatory – change leaders seek the ideas and advice of associates and then use many of those ideas. Criteria for evaluating the degree to which the participatory style should be used:

Urgency

Degree of Support

Referent and Expert Power of Leaders

Resistance to Change

Effort to block new ways of doing things



Four Factors

Lack of understanding

Self-interest

Different assessments

Low tolerance for change

The **DADA** Syndrome



D

Denial – ignore possible or current change



A

Anger – individuals facing unwanted change become angry about the change



D

Depression – individuals experience emotional lows (Fear of being fired, inferiority)



A

Acceptance – individuals embrace the reality of the situation and hopeful, willing to try to make the best of it

practice

practice

practice

practice

QUESTION #1

When an organizational change is being instituted, what outcome can always be anticipated?

A. Resistance

B. Full cooperation if a detailed plan is devised

C. Long term increase in productivity

D. A series of perfect solutions

QUESTION #2

*What is **not** allowed during a brainstorming session?*

- A. A freeform discussion of ideas
- B. A discussion of the pros and cons of ideas as they are presented
- C. A list of criteria
- D. Formal rules for group brainstorming

QUESTION #3

*Which of The following statements **most accurately** defines "Operations Research"?*

- A. A highly sophisticated system used in the analysis of management problems.
- B. A specialized application of application of data processing in that analysis of management problems.
- C. Research on operating problems.
- D. The application of sophisticated mathematical tools to the analysis of management problems.

QUESTION #4

Use of the systems approach is most likely to lead to:

- A. Consideration of the impact on the whole organization of actions taken in any part of that organization.
- B. The placing of restrictions on departmental authority.
- C. Use of mathematical models to sub-optimize production.
- D. Consideration of the activities of each unit of an organization as a totality without regard to the remainder of the organization.

QUESTION #5

*When ongoing process problems are occurring in a unit, for example: Inter-office mail from the mailroom is 3 to 5 days late – **Who should be asked about the nature of the problem?***

- A. The Commissioner
- B. The Deputy Commissioner
- C. The Executive Managers
- D. The mail delivery staff

QUESTION #6

Of the following: The one which a Line Role generally does not include is?

- A. Controlling results and performance
- B. Coordinating work and exchanging ideas with the other Line organizations
- C. Implementation of approved plans developed by staff
- D. Planning work and making operating decisions

QUESTION #7

Of the following, the major difference between systems and procedure analysis and work simplification is:

- A. The former complicates organizational routine, and the latter simplifies it.
- B. The former is objective, and the latter is subjective.
- C. The former generally utilizes expert advice and the latter is a "Do it yourself" improvement by supervisors and workers.
- D. There is no difference other than the name.

QUESTION #8

ORGANIZATIONAL SYSTEMS AND PROCEDURES SHOULD BE:

- A. Developed as problems arise as no design can anticipate adequately the requirements of an organization.
- B. Developed jointly by experts in systems and procedures and the people who are responsible for implement them.
- C. Developed solely by experts in systems and procedures
- D. Eliminated whenever possible to save unnecessary expense.

QUESTION #9

A detailed description of the steps to be taken in order to accomplish a job is most appropriately called a:

- A. Policy
- B. Rule
- C. Procedure
- D. Principle

QUESTION #10

The clerk who worked in Department A earned the following salaries: \$15,105 the first year, \$15,750 the second year and \$16,440 the third year. Another clerk who worked in Department B for three years earned \$15,825 a year for 2 years and \$16,086 the third year. The DIFFERENCE between the average salaries received by both clerks over a three-year period is:

- A. \$147
- B. \$153
- C. \$261
- D. \$423

QUESTION # 10

Let's Figure this out

Step 1. Add Clerk Salaries for dept A. $\$15,105 + \$15,750 + \$16,440 = \$47,295$

Step 2. Divide total by 3 to get average salary. $\$15,765$

Step 3. Add Clerk Salaries for dept B. $\$15,825 + 15,825 + \$16,086 = \$47,736$

Step 4. Divide total by 3 to get average salary. $\$15, 912$

Step 5. Subtract $\$15, 912$ from $\$15,765 = \147

The Department of Corrections is working on a new jail system to replace Rikers Island. They are trying to see which areas are cost efficient and need the help of Staff Analysts and Staff Analyst Trainees to make this happen.

Please use the chart below to answer questions 11-13.

		Salary	Training Materials	Training Facility	Trainer's Fee	
Region	# employees	(cost per employee)	(cost per employee)	Flat Cost	Flat Cost	Total Cost
Northeast	37	\$27.00	\$9.75	\$925.00	\$550.00	
Southeast	53	\$24.75	\$9.75	\$425.00	\$550.00	
Central	55	\$24.00	\$9.75	\$450.00	\$550.00	
Northwest	40	\$25.50	\$9.75	\$875.00	\$550.00	
Southwest	42	\$26.25	\$9.75	\$850.00	\$550.00	

QUESTION #11

If **five** employees resigned from the Southwest Region, how much would its **new** total cost for the Customer Service Training be?

- A. \$2,631.00
- B. \$2,674.00
- C. \$2,713.00
- D. \$2,732.00

QUESTION #11

Let's Figure this out

Step 1. Refer to the chart on the previous page and focus on Southwest Region

Step 2. You now have 37 employees after you remove the 5 .

$$\text{Multiply } 37 \times \$26.25 = \$971.25$$

$$\text{Then multiply } 37 \times \$9.75 = \$360.75$$

Step 3. Add the Flat costs of \$850 + \$550

Step 4. Now add everything together: = \$2732

QUESTION #12

If the training facility cost increased by 25% for the Southeast and Northwest Regions, which of the following regions would cost the MOST to conduct the Customer Service Training?

- a. Northeast**
- b. Southeast**
- c. Northwest**
- d. Southwest**

QUESTION #12

Let's Figure this out

Step 1. Figure out the training cost for the two regions.

Then increase their costs by 25%

Step 2. Multiply 53 X \$24.75

Multiply 53 X \$9.75

Step 3. Add the flat rate cost \$425 + \$550

Step 4. Note your total: \$2803.50 For Southeast

Step 5. Multiply 40 X \$25.50

Multiply 40 X 9.75

Step 6. Add the flat rate cost \$875 + \$550

Step 7. Total comes to \$2835.00 For NorthWest

Step 8. Increase cost for Southeast by 25%

(\$2803.50x.25=\$700.875) New total is \$3504.38

Step 9. Increase cost for Northwest by 25%.

(\$2835.00x.25=708.75 New total is \$3543.75

Step 10. Refer back to question.

The answer is Northwest.

QUESTION #13

If 20% of the Central Region's employees retired and management decided to use the savings on training additional staff in the Northeast, then how many additional northeast employees will be able to be trained? The answer should be rounded to nearest whole number.

- A. 11**
- B. 48**
- C. 10**
- D. 27**

QUESTION # 13

Let's Figure this out

Step 1. 20% of central region employees retired so that equals 11 staff ($55 \times .20 = 11$)

Step 2. Calculate the cost of 11 staff ($\$24 \times 11$)
(Sal) ($\$9.75 \times 11$) (TM) = Total is $\$371.25$

Step 4. Divide $\$371.25$ by $\$36.75$, ($\$27.00 + 9.75$) which is cost per employee and training for Northeast area

The answer is slightly more than 10 (**10.10204**)

Operations Research

Answer Key

1. A
2. D
3. D
4. A
5. D
6. B
7. C
8. B
9. C
10. A
11. D
12. C
13. C