

**COVENANT UNIVERSITY
NIGERIA**

*TUTORIAL KIT
OMEGA SEMESTER*

**PROGRAMME: MECHANICAL
ENGINEERING**

COURSE: MCE 327

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MCE327: TECHNOLOGY MANAGEMENT

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1. State the role of a technical manager
2. List two attributes of a good values statement
3. Define or explain the term “quality”
4. List the three features in Kano analysis
5. Define or explain the term strategic planning
6. Two jobs are waiting to be processed at two machines, A and B. Each job must be processed first on A and then on B. With the aid of a Gantt chart, compute the minimum total time to complete both jobs. This table show the processing time of each job on each machine in minutes.

	A	B
Job 1	30	50
Job 2	50	30

7. Explain the term “works methods design”
8. List four (4) activities where the ability of human beings appear to surpass that of existing machines
9. Define mission, vision and values and relate to Covenant University
10. List four activities where the ability of existing machines appear to surpass that of human beings.
11. List any six attributes of a good mission statement
12. Define or explain the black and white box concept of a system
13. List three steps required in product development

14. Explain some steps required in the development of a better method

15. Define or explain the term linear programming

16. Maximize $x_0 = 4x_1 + 4x_2$

Subject to:

$$2x_1 + 7x_2 \leq 21$$

$$7x_1 + 2x_2 \leq 49$$

$$x_1, x_2, \geq 0$$

Solve the problem graphically

17. (i) Set up the initial tableau for a simplex solution for the problem in No. 16

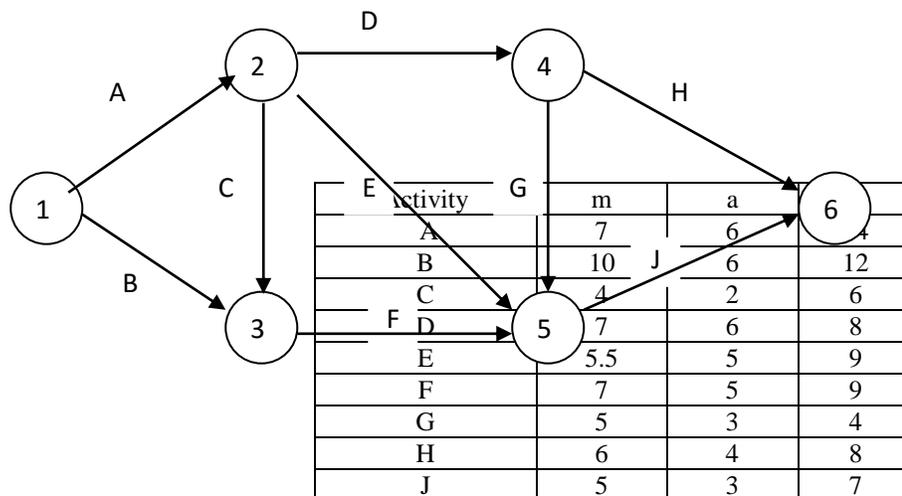
(ii) What is the pivot element?

18. Define or explain the following terms:

a. Project

b. Project management

Given the project network and the time estimates below, calculate:



19.. The critical path of the project

20. The probability that the project will be completed in 27 days.

MODEL ANSWERS

1. The technical manager leads technological development activities. He is trained in specific technical area and keeps the team focused in specific areas such as manufacturing or software development.
2. Discuss
3. The totality of features and characteristics of a product or service that bears its ability to satisfy stated or implied needs.
4. Discuss
5. It is a disciplined effort that produces fundamental decisions and actions that shape and guide what an organization is, who it serves, what it does and why it does it with a focus on the future.
6. Discuss
7. Developing a better method. There is no perfect method. To develop the preferred method (i) eliminate all unnecessary work; (ii) combine operations or elements; (iii) change the sequence of operation; (iv) simplify the necessary operations.
8. Discuss
9. A mission statement gives the reason the organization exists.
The vision statement describes what the organization wants to be. What is the destination for this organization?
“Values represent the core priorities in the organization’s culture, including what drives members’ priorities and how they truly act in the organization, etc.”
10. Discuss
11. The following list gives attributes of a good mission statement:
 - It should state the purpose for which the organization exists.
 - It should have a narrow focus.
 - It should be clear.
 - It should get to the point.
 - It should be realistic, feasible, and achievable.
 - It should be a succinct one sentence with few adjectives and adverbs.
 - It should provide guidance for leadership and employees.
 - It should let prospective employees know what the company is like.
 - It should be unique to that organization.
12. Discuss
13. Generate idea
 - Screen idea
 - Test the concept
 - Business analysis
 - Marketability test
 - Product development
 - Commercializing
 - Launch
14. Discuss

15. Linear programming is a technique for the optimization of a linear objective function, subject to linear inequality constraints.
16. Discuss
17. Work
18. Discuss
19. Calculate
20. Learn to read the normal table to solve.