



PROGRAM : BACHELOR OF ENGINEERING
TECHNOLOGY EXTRACTION
METALLURGY

SUBJECT : PROJECT MANAGEMENT EXAM.

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INSTRUCTION

1. CHOOSE FIVE QUESTIONS.
 2. MARKS WILL BE DEDUCTED TO UNTIDY WORK.
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QUESTION 1

1.1 Project life cycle enables the Project Manager to look at the total picture (from cradle to the grave). Discuss briefly on how the project's lifecycle can be applied to a metallurgical plant for processing an ore body discovered on a Mine. Consider the following:

(b) The product life cycle from concept to disposal. Using the input-output model discuss briefly the four major cycles in your project. (10)

(c) The value/changes model indicates that the potential to add value decreases as the project progresses. Discuss this with the aid of a graph. (4)

(d) Each phase of the project life cycle can be subdivided into its own mini life cycle, and further, each phase of this life cycle can also be sub-divided, and so on. Give an example how this can be applied to your project as a method of subdivision leading to planning and control. (3)

1.2 Why is it important to consider the whole life cycle cost and not to only focus on the project life cycle? (3)

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QUESTION 2

2.1 Use the information below to compress one time unit per move using the least cost method. Reduce the schedule until you reach the crash point of the network. For each move identify what activities were crashed and the adjusted total cost. (15)

	Precedence	Crash cost	Maximum crash time	Normal time	Normal cost
A	-	250	1	2	150
B	A	200	1	3	100
C	B	350	1	2	200
D	B	400	1	5	200
E	A	400	2	5	200
F	C	300	2	3	150
G	D	250	1	5	200
H	EGF			1	200

2.2 Discuss briefly the five common reasons for crashing the project. (5)

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QUESTION 3

3.1 Bill is considering placing a bid on a plant construction project. Bill has determined the five tasks he would need to carry out the project. Using PERT approach, bill has estimated in the table below how long these tasks will take in days.

Task	Optimistic time	Most likely time	Pessimistic time	Predecessors
1	16	19	28	-
2	30	30	30	-
3	60	72	90	-
4	18	27	30	-
5	17	29	47	1
6	4	7	10	1
7	12	15	18	5
8	6	12	24	6,7
9	18	27	30	2
10	20	35	50	3
11	40	55	100	4
12	11	20	29	8
13	14	23	26	11
14	13	16	19	9,12
15	0	0	0	10,13,14

There is a penalty of R500, 000 if the project is not completed in 11 weeks. Therefore, Bill is interested in how likely it is that his company could finish the project in time.

- (a) Construct the project network for this project. (5)
- (b) Find the estimate of the mean and variance of the duration of each activity. (2)
- (c) Find the expected project duration. (1)
- (d) Find the approximated probability of completing the project by day 112 weeks. (5)
- (e) Bill has concluded that the bid he would need to have a realistic chance of winning the contract would earn his company a profit of R250, 000 if the project is completed within 116 days. However, because of the penalty for missing this deadline, his company would lose about R250,000 if the project takes more than 11 weeks. Therefore he wants to place the bid only if he has at least a 50% chance of meeting the deadline. How would you advise him. (7)

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QUESTION 4

- 4.1. Discuss briefly the attributes of a Project Manager and why they are important in managing a complex project. (5)
- 4.2 Projects are carried out in a project environment where they are internal and external constraints. Discuss these constraints and how the Project Manager can deal with these constraints in order for him or her to achieve the company goals and needs. (15)

[20]

QUESTION 5

- 5.1 The time, cost quality trade off clearly shows a relationship between the three parameters. Give examples how these trade-offs apply to your project. (4)
- 5.3 Discuss briefly the impact of information technology on project management. (6)
- 5.4 A need is strong feeling of deficiency in a particular area of a human being, which creates an uncomfortable tension, which a man strives to reduce. Discuss briefly these

needs in a project environment. Why is need analysis important in completing your goals as a Project Manager? (5)

5.5 Explain the project viability checks and why it is the basis of the client feasibility study to which the contractor, as practicing specialist can have a valuable input. (5)

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QUESTION 6

6.0 Explain briefly the history of project management from 1900 to late 2000. (5)

6.1 Explain the project viability checks and why it is the basis of the client feasibility study to which the contractor, as practicing specialist can have a valuable input. (5)

6.3 Discuss briefly the cost associated with quality control in project environment. (10)

QUESTION 7

7.1 The time, cost quality trade off clearly shows a relationship between the three parameters .Give examples how these trade –offs apply to your project. (4)

7.2 You work for a 3T company, which expects to earn at least 18 percent on its investments. You have to choose between two similar projects .The following chart shows the cash information for each project. The anticipated inflation is expected to be 10% per annum. Which of the two projects would you fund if the decision is based only on financial information? Why?

Omega Year	Inflow	Outflow	Alpha Year	Inflow	Outflow
0	R0	R225000	0	R0	R300000
1	R0	R190000	1	R50000	R100000
2	R150000	R0	2	R15000	R0
3	R220000	R30000	3	R25000	R50000
4	R215000	R0	4	R25000	R0
5	R205000	R30000	5	R20000	R50000
6	R197000	R0	6	R18000	R0
7	R100000	R30000	7	R12000	R30000

(12)

7.3 Discuss briefly the impact of information technology on project management. (4)

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