

**NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY**  
**DEPARTMENT OF APPLIED CHEMISTRY**  
**END OF SEMESTER EXAMINATIONS – MAY 2003**  
**PROJECT DEVELOPMENT AND MANAGEMENT - SCH 4210**  
**TIME – (3) THREE HOURS**

**INSTRUCTIONS TO CANDIDATES**

Answer **ANY FIVE** questions from the six (6) provided. Each question carries 20 marks.

1. (a) Describe the elements of a project planning and control system. (10 marks)
- (b) Why is it important to have clear goals and objectives in project planning? (4 marks)
- (c) Explain the feasibility study project – life cycle. (6 marks)
2. (a) What is project management? Illustrate your answer with a pictorial representation. (6 marks)
- (b) Describe the process of constraints evaluation. How can constraints be managed in a project environment? (10 marks)
- (c) List four (4) of the most important roles of the Project Manager. (4 marks)
3. The following projects are under consideration.

Project	Investment	IRR	Discounted Cash Flows At 10%
A	\$50 000	20%	\$116 000
B	\$120 000	18%	\$183 000
C	\$110 000	16%	\$147 000
D	\$130 000	15%	\$171 000
E	\$90 000	12%	\$103 000
F	\$180 000	11%	\$206 000
G	\$80 000	8%	\$66 000

- (a) What is the net present value of the projects. (7 marks)
- (b) If the cost of capital is 10%, which project is rejected out right and why? (2 marks)

- (c) If the company has a total budget for projects of \$300 000, which projects should be selected and why? (8 marks)
- (d) List the advantages of the factor scoring models in project selection. (3 marks)
4. (a) Differentiate between the incentive and non-incentive types of project contracts. For each type, indicate the advantages and disadvantages. (15 marks)
- (b) What are the conditions for termination of a contract? Indicate the responsibilities of the customer and/or contractor on termination of contract. (5 marks)
5. Draw the network and identify the critical path. Also calculate the earliest–latest and finishing times for each activity shown on following table:

Activity	Preceding Activity	Time (weeks)
A	-	4
B	-	6
C	A,B	7
D	B	8
E	B	5
F	C	5
G	D	7
H	D,E	8
I	F,G,H	4

(20 marks)

6. (a) Mr Ndlovu is the Project Manager of a \$65 million project of which \$1 million is subcontracted out to another company in which Mr Posa is the Project Manager. Mr Ndlovu does not consider Mr Posa as his counterpart and continually communicates with the Director of Engineering in Mr Posa's company. What type of conflict is that, and how should it be resolved? (10 marks)
- (b) With the aid of a graphical illustration, show the relative intensity of this type of conflict over the project life-cycle. (10 marks)

**END OF PAPER!!!**