



**NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY**

**FACULTY OF APPLIED SCIENCE**

**DEPARTMENT OF APPLIED CHEMISTRY**

**PROJECT DEVELOPMENT AND MANAGEMENT – SCH 4210**

**First Semester Examination Paper**

**December 2017**

This examination paper consists of 4 pages

**Time Allowed: 3 hours**

**Total Marks: 100**

**Examiner's Name: DR B N YALALA**

**INSTRUCTIONS**

Answer **ANY five (5)** questions from the seven (7) provided. Each question carries 20 marks.

**MARK ALLOCATION**

<b>QUESTION</b>	<b>MARKS</b>
1.	<b>20</b>
2.	<b>20</b>
3.	<b>20</b>
4.	<b>20</b>
5.	<b>20</b>
6.	<b>20</b>
7.	<b>20</b>
<b>TOTAL POSSIBLE MARKS</b>	<b>100</b>

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1. (a) List **five characteristics** of projects and describe how each is different from business-as-usual activities. (10 marks)
- (b) Explain what is meant by stakeholder management and describe how the project manager ensures stakeholder co-operation. (10 marks)
2. (a) Explain briefly the Project Life Cycle and the phases involved with the help of an example. (10 marks)
- (b) Describe the role of a project manager. (10 marks)
3. (a) Elaborate the statement “deliverable-oriented grouping of project elements that organizes and defines the total work scope of the project. Each descending level represents an increasingly detailed definition of the project work”. Also list the various benefits and demonstrate your understanding by building a model. (10 marks)
- (b) Describe briefly how you transform a WBS into a Network Diagram and draw a network diagram for the following set of activities.

Activity	Predecessors	Duration in working days
A	Start None Project	5
B	A	15
C	A	5
D	A	10
E	C and D	15
F	B and E	5
G	F	5

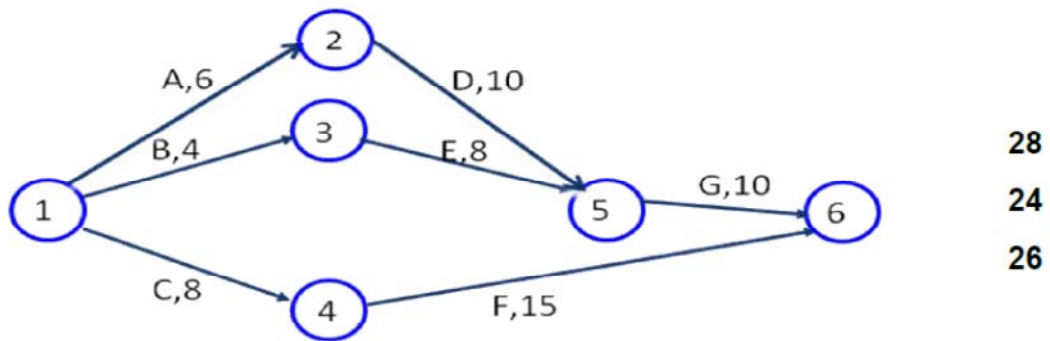
(10 marks)

4. The cash flows for the two different projects are projected to be as follows over an initial period of 5 years:

Year	Cash Flow 1	Cash Flow 2
0	(\$60m)	(\$40m)
1	\$15m	\$8m
2	\$20.5m	\$8.5m
3	\$15m	\$15m
4	\$30m	\$15m
5	\$25.5m	\$10m

The initial capital is borrowed at an annual cost of 15%.

- (a) Rank the projects in accordance with their NPV and their IRR. (15 marks)
- (b) Which project should be selected and why. (5 marks)
5. (a) The Project represented in the PERT below is to be finished in day 36. We know that all the activities start in Early Start.(1.75v)



	ES	EF	LS	LF
1				
A				
B				
C				
F				
G				

(10 marks)

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- (b) You monitored figures on cost and planned/earned value for each individual project week until the data date at the end of the sixth week.

Project Week	Actual Costs / \$	Earned Value / \$	Planned Value / \$
1	65,000	61,000	67,000
2	85,000	79,000	89,000
3	100,000	102,000	110,000
4	125,000	124,000	121,000
5	135,000	133,000	139,000
6	125,000	120,000	131,000

Calculate CPI, CV and SV and comment on the status of this project at this date?  
(5 marks)

- (c) Explain three (3) difficulties that are likely to be encountered during project selection in a hyper inflationary environment like ours.  
(5 marks)

6. Discuss the following project management terms:

- (a) Smart objectives
- (b) Scope statement
- (c) WBS
- (d) Cost baseline

(20 marks)

7. You have been contracted by S & D Plastics (Ptv) Ltd to develop a manufacturing process for fibre glass tanks.

- (a) What type of contract would you enter into and why?  
(4 marks)
- (b) Develop a planning and control system for this project.  
(10 marks)
- (c) Describe three conditions that may result in termination of this contract.  
(6 marks)

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