NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

FACULTY OF APPLIED SCIENCES

DEPARTMENT OF APPLIED CHEMISTRY

PROJECT DEVELOPMENT AND MANAGEMENT

SCH 4210

First Semester Examination Paper

December 2016

This examination paper consists of 3 pages

Time Allowed: 3 hours

Total Marks: 100

Special Requirements:

Examiner's Name: Mr Donatus Dube

INSTRUCTIONS

1. Answer any four (4) questions
2. Each question carries 25 marks
3. Use of calculators is permissible

MARK ALLOCATION

QUESTION	MARKS
1.	**25**
2.	**25**
3.	**25**
4.	**25**
5.	**25**
TOTAL POSSIBLE MARKS	**100**

1. a) Explain what is meant by stakeholder management and describe how the project manager ensures stakeholder co-operation (10 marks)

   b) What are the advantages and disadvantages of working as a team? State the four development stages of a project team? (10 marks)

   c) With an original investment of $35,000 and the net returns given below, two projects, A and B are competing for the funds. Cost of capital is 14%.

Year	Project A	Project B
1	$12 000	$10 000
2	$14 000	$12 000
3	$16 000	$16 000
4	$12 000	$14 000
5	$10 000	$12 000

   Rank the two projects in accordance with NPV. (5 marks)

2. a) Differentiate between leaders and managers in a project environment. (8 marks)

   b) Why do you think many leaders in Africa have found it difficult to see through many projects meant to uplift the living standards of their people? Use concrete examples in your answer. (10 marks)

   b) Rank the projects in 1c) in accordance with NPV. (7 marks)

3. a) What is Work Breakdown Structure (WBS) and why is it important in managing projects? (5 marks)

   b) Differentiate between the following using examples from your income generating project.
   - Product Breakdown Structure (PBS)
   - Cost Breakdown Structure (CBS)
   - Organisation Breakdown Structure (OBS) (9 marks)

   c) The following three tasks form the entire critical path of the project network. The three estimates of each of these tasks are tabulated below. How long would the project take to complete expressed with an accuracy of one standard deviation?

Task	Optimistic	Most likely	Pessimistic
A	15	25	47
B	12	22	35
C	16	27	32

   (5 marks)

   d) A fixed-price-plus-incentive-fee (FPIF) contract has a target cost of $130,000, a target profit of $15,000, a target price of $145,000, a ceiling price of $160,000, and a share ratio of 80/20. The actual cost of the project was $150,000. How much profit does the seller make?

   (6 marks)

4. Study the project shown below and answer the questions that follow;

Activity	Duration in weeks	Activity	Duration in weeks
1,2	3	5,10	2
1,3	4	6,10	5
2,4	3	8,10	8
2,5	5	9,10	3
3,6	2		
4,7	3		
4,8	4		
7,9	3		

a) Draw the network. (AoA) (5 marks)
b) Calculate all the total floats (7 marks)
c) Calculate all the free floats (7 marks)
d) Mark the critical path on the diagram (3 marks)
e) What is independent float? (3 marks)

5. A project has an original budget of $600 000 and after the first 4 months of a 12 months planned project time, the Scheduled Costs, Actual Costs and Earned Values are as follows:

Months	1	2	3	4
Scheduled costs	32 000	60 000	150 000	240 000
Actual costs	35 000	70 000	160 000	250 000
Earned value	30 000	50 000	140 000	230 000

a) Draw the three curves, Scheduled, Actual & Earned Value (3 marks)
b) Calculate the Cost Variance for month 4 (3 marks)
c) Calculate the Schedule Variance (cost based) for month 4 (3 marks)
d) Find the Schedule Variance (time based) for month 4 (2 marks)
e) Calculate the CPI for month 4 (2 marks)
f) Calculate the SPI (cost based) for month 4 (2 marks)
g) Find the SPI (time based) for month 4 (2 marks)
h) Calculate the estimated final cost of the project (3 marks)
i) Calculate the estimated final completion time of the project (3 marks)
j) Comment on the performance of this project (2 marks)

End of Question Paper!!!