UNIVERSITY OF SWAZILAND

FACULTY OF COMMERCE

DEPARTMENT OF BUSINESS ADMINISTRATION

FINAL EXAMINATION PAPER

MAY 2016

TITLE OF PAPER   :   ROJECT MANAGEMENT

COURSE CODE   :   BA303 FULL TIME STUDENTS

TIME ALLOCATED :   THREE [3] HOURS

TOTAL MARKS   :   100 MARKS

INSTRUCTIONS

1. TOTAL NUMBER OF QUESTIONS IN THIS PAPER IS 5
2. THE PAPER CONSISTS OF SECTION A AND SECTION B
3. ANSWER ALL QUESTIONS IN SECTION A WHICH ARE COMPULSORY AND THREE [3] QUESTIONS IN SECTION B.
4. THE MARKS ALLOCATED FOR A QUESTION/PART OF A QUESTION ARE INDICATED AT THE END OF EACH QUESTION/PART OF QUESTION.
5. NOTE: MAXIMUM MARKS WILL BE AWARDED FOR QUALITY, LAYOUT, ACCURACY, AND GOOD EXPLANATION OF PROJECT MANAGEMENT CONCEPTS.

THIS PAPER MUST NOT BE OPENED UNTIL PERMISSION HAS BEEN GRANTED BY THE INVIGILATOR.

SECTION A IS COMPULSORY: ANSWER ALL QUESTIONS IN THIS SECTION

QUESTION 1.1

The re-entry of Swazi Airline in the local aviation industry is going to bring competition. The CEO of Swazi Airways believes that an aggressive entry strategy that focuses on delivering quality service is the only survival way for his company. The CEO is therefore keen to maintain high efficiency and in that regard thinks one aspect of the company operations that needs to be constantly checked is the time it takes to service planes between flights. He identified the activities that are involved and their preceding activities. These are shown in the table below.

ACTIVITY	DESCRIPTION	PRECEDENCE	DURATION (MINUTES)
A	Drive service vehicle to plane	--	2
B	Attach stairway	A	3
C	Unload baggage	A	25
D	Refuel	A	15
E	Passengers disembark	B	8
F	Clean cabin	E	20
G	Load baggage	C	30
H	Load food and beverages	E	10
I	Stock up water tanks	A	5
J	Service toilets	I	5
K	Passengers embark	F,H	15
L	Detach stairway	K	3
M	Drive service vehicle from plane	D,G,J,L	2

a. Draw the network diagram for the above problem   (7 marks)

b. Establish the earliest start time, earliest finish time, latest start time, latest finish time, and slack of each project activity **(13 marks)**

c. What are the project's critical path activities? **(4 marks)**

d. What is the longest time needed to complete the project? **(4 marks)**

QUESTION 1.2

Based on project information provided in the table below, please calculate the amount of the budget overrun or under-run **(12 marks)**

ACTIVITY	TOTAL BUDGET (E000)	PERCENTAGE OF COMPLETION (%)	ACTUAL COST (E000)
A	22,000	100	20,000
B	30,000	100	36,000
C	26,000	100	26,000
D	48,000	10	6,000
E	56,000	20	20,000
F	30,000	20	4,000
G	80,000	0	0
H	16,000	0	0

[TOTAL 40 MARKS]

Section B. Choose 3 questions of your choice from this section. Each question carries 20 marks.

QUESTION 2.

A company is planning a new product and wants to choose the best of three alternatives. A project team has found the important factors, together with maximum scores shown in the table below. After considerable discussion the team also agreed on the scores for each product.

Factor		SCORES Maximum	A	B	C
Product:					
	Time to develop product	7	7	3	5
	Research and development needed	8	7	4	6
	Experience with similar products	12	11	4	7
	Similarity to existing products	5	4	1	3
	Expected life	12	9	6	8
	Ease of manufacture	18	16	9	14
	Skills needed at various stages	8	8	3	5
	New production equipment needed	4	4	2	3
	Requirements of raw materials	6	4	4	2
Finance:					
	R&D cost	12	11	9	10
	Capital outlay	17	13	8	10
	Return on investment	25	12	14	20
	Net present value	18	10	14	18
	Reduced profit from existing products	11	3	8	6
Market:					
	Initial demand	25	21	9	14
	Marketing effort needed	8	6	3	8
	Advertising needed	4	2	1	4
	Current competition	15	5	12	10

	Interactions with existing products	12	3	7	8
	New competition likely	8	5	5	5
	Stability of demand	5	3	2	4
	Market trends	10	4	9	7

i. Which product would you recommend based on product factors? (3marks)

ii. Which product would you recommend based on finance factors? (3marks)

iii. Which product would you recommend based on market factors? (3 marks)

iv. Overall which product would you recommend? (5 marks)

v. Under what circumstances do executives disregard recommendations that are based on quantitative techniques? (6marks)

[TOTAL 20 MARKS]

QUESTION 3.

Zwelibazi Wiring and Electric is a company that installs wiring and electrical features in residential construction. Tenele Gugu has been concerned with the amount of time that it takes to complete wiring jobs. Some of the workers are very unreliable. A list of activities and their optimistic, their pessimistic, and their most likely completion times in days are given in the following table.

ACTIVITY DURATION (<u>DAYS</u>)

IMMEDIATE ACTIVITY	a	m	b	PREDECESSORS
A	3	6	8	----
B	2	4	4	----
C	1	2	3	-----
D	6	7	8	C
E	2	4	6	B,D
F	6	10	14	A,E
G	1	2	4	A,E
H	3	6	9	F
I	10	11	12	G
J	14	16	20	C
K	2	8	10	H,I

3.1. Determine the expected completion time and variance for each activity **(6)**

3.2. Determine the ES,EF,LS, and LF, and slack for each activity **10)**

3.3. Determine the project's completion time and the critical path **(4)**

[TOTAL 20 MARKS]

QUESTION 4.

When you are planning for a project you must be reminded that constraints have a good chance of occurring and they must be planned for. Discuss the constraints that you would consider for an irrigation project in one of the Swaziland Regions.

[TOTAL 20 MARKS]

QUESTION 5.

a. Discuss key project control areas **(10)**

b. Why would you use the services of internal agents and external agents in Project management? **(10**

[TOTAL 20 MARKS]