UNIVERSITY OF COLOMBO, SRI LANKA

FACULTY OF MANAGEMENT AND FINANCE

Bachelor of Business Administration (Level II Semester VII) Examination

July - 2017

BEC 2207 - Project Evaluation

Two (02) Hours

Answer all Questions

Use of calculators is allowed

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1. A project is a temporary endeavor to create a unique product or service in which people normally involve performing inter-related activities.

    i. Briefly explain life cycle of a project.

    (04 Marks)

    ii. Briefly explain the triple constraint of a project.

    (04 Marks)

    iii. Describe the way that minimum spanning tree diagram is used in project appraisal?

    (04 Marks)

    iv. Explain the difference between Internal Rate of Return (IRR) and Modified Internal Rate of Return (MIRR) with respect to the project appraisal.

    (03 Marks)

    v. X and Y are two independent projects. An investor needs to select the most appropriate project from X and Y. He requests your help to evaluate them. The

initial investment and the future net cash flows of each project have been provided as follows.

Types of projects	Project X	Project Y
Initial Investment	300,000	400,000
Future cash flows		
Year	Project X	Project Y
1	90,000	100,000
2	150,000	130,000
3	75,000	85,000
4	80,000	90,000

Evaluate two projects and select the most appropriate project based on Internal Rate of Return (IRR) and Modified Internal Rate of Return (MIRR).

Assume future cash flows will be reinvested at 15 % interest rate.

(10 Marks)

(Total 25 marks)

2.   i   "Z" Company is evaluating a project which can expand the existing productions of the company. The profit will be based on the following conditions.

    a.   Based on the similar project started by competitive companies.

    b.   The strength of the programs conducted by the "Z" company.

    c.   The strength of the programs conducted by competitive companies.

The following additional information is provided.

"Z" Company program	Competitive Company's program		Conditional profit
	Probability of similar project to be started 0.7		
High	High	0.7	150,000
	Mid	0.2	180,000
	Low	0.1	240,000
Mid	High	0.3	140,000
	Mid	0.5	165,000
	Low	0.2	220,000
Low	High	0.2	120,000
	Mid	0.1	150,000
	Low	0.7	200,000

Probability of similar project not to be started 0.3

	Conditional profit
High	300,000
Mid	250,000
Low	180,000

Rs.45, 000 has not been considered in the above conditional profit. Evaluate the case and give your conclusion.

(10 Marks)

ii. Information for three projects (A, B, and C) has been provided in the following table.

Year	Project A	Project B	Project C
	NCF (000')	NCF (000')	NCF (000')
0	(1500)	(1500)	(1500)
1	640	480	450
2	460	400	400
3	530	385	570
4	600	540	385
5	300	580	270

Select the appropriate project based on Discounted Payback Period. Use 12 % cost of capital.

` (07 Marks)

iii. Explain the difference between nominal interest rate and effective interest rate?

(03 Marks)

iv. A person is willing to borrow an Rs.800000 loan. The loan payment should be started after five years from today. At the end of every year one installment should be paid and within 12 years loan should be settled. Nominal interest rate is 16% compounded quarterly. What is the value of installment?

(05 Marks)

(Total 25 marks)

3. An investor needs to construct a building. This project has been given to a construction company to get it completed very soon. The construction company has identified the following activities and the cost.

Activity	Predecessors	Time estimated (days)			Normal cost (Rs)	Crash cost (Rs)	Crash time	Labor
		a	m	b				
A	-	2	4	6	2500	3000	2	2
B	-	3	5	7	1800	2100	4	3
C	A	3	6	9	600	1080	2	4
D	A	4	5	6	1400	1660	3	2
E	A	1	2	3	1750	1950	1	1
F	C	1	3	5	750	910	1	1
G	D	3	6	9	900	1200	4	3
H	B,E	6	8	10	1500	1800	3	5
I	H	2	4	6	1200	1500	1	3
J	F,G,I	2	5	8	1000	1180	3	2

i. If the project is completed within 15 days, Rs.1400 will be paid additionally by the project owner. Evaluate and take decision.

(13 Marks)

ii. Schedule activities based on time and decide labor requirement for each day.

(07 Marks)

iii. What is meant by project crashing and how can you use it in project evaluation?

(05 Marks)

(Total 25 marks)

4. i. how you can use conditional probability in project evaluation. Briefly describe.

(05 Marks)

ii. An investor needs to evaluate three projects X, Y and Z according to the economic condition good or bad. Out of the expected profit 30% from X, 25% from Y and 45% from Z will be provided. The following conditional probabilities belong to the projects in relation to economic condition.

$P(A/X) = 0.7$ $\qquad$ $P(B/X) = 0.3$

$P(A/Y) = 0.6$ $\qquad$ $P(B/Y) = 0.4$

$P(A/Z) = 0.8$ $\qquad$ $P(B/Z) = 0.2$

Where: Good economic condition is denoted by A

Bad economic condition is denoted by B

If good economic condition is there, which project is appropriate?

(10 Marks)

iii. You need to follow a professional course after 4 years from today. The course fee is expected Rs.250000. The duration of the course is 2 years and you need Rs.20000 for your monthly payments at the end of every month during that period. You expect to start a saving account today to deposit some amount at the beginning of every quarter to get your requirement filled. If annual interest rate is 12% and compounded monthly, how much should you deposit at the beginning of every quarter?

(05 Marks)

iv. An investor expects to start a new project worth of 25mn after 12 yrs from today. He plans to deposit Rs.1.5 mn at the end of every year to make a fund for the project. The annual interest rate is 12% compounded quarterly for first 8 yrs. After 8 yrs the annual interest rate is 14% compounded monthly. Will the investor's fund be sufficient to start the project? -

(05 Marks)

(Total 25 marks)