



UNIVERSITY OF RUHUNA

Faculty of Engineering

End-Semester 6 Examination in Engineering: December 2016

Module Number: IS6203

Module Name: **Entrepreneurship and Project Management**

[Three Hours]

[Answer all question, each question carries ten marks]

- Q1 a) Briefly explain the term 'entrepreneurship' in your own words. [2 Marks]
- b) Explain four key characteristics of an entrepreneur. [4 Marks]
- c) What are the key benefits of entrepreneurship? Briefly explain 4 of them. [4 Marks]
- Q2 a) Briefly explain the term 'Innovation'. [1 Mark]
- b) Explain the four phases of creative process. [4 Marks]
- c) What are the different types of innovation. Explain them briefly. [3 Marks]
- d) Briefly explain the inter-relationships between innovation, entrepreneurship and engineering science. [2 Marks]
- Q3 a) List four drawbacks of entrepreneurship. [3 Marks]
- b) Explain the impact of entrepreneurship on economy. [2 Marks]

c) What are the key barriers towards promoting entrepreneurship in Sri Lanka? Suggest different types of methods to overcome such obstacles. [3 Marks]

d) Describe the elements of an effective business model/ plan. [2 Marks]

Q4 a) Briefly explain the term 'Project Management' in your words. [2 Marks]

b) Explain key challenges of project management. [2 Marks]

c) Explain the concept of 'Work Breakdown Structure' by using a simple example from your engineering specialization. [3 Marks]

d) Draw a Gantt Chart for the example you have taken at part C. [3 Marks]

Q5 Using the information in Table 1, answer the questions given below.

Assume the project team will work a standard working week (5 working days in 1 week) and that all task will start as soon as possible.

Table 1

Task	Description	Duration (Working Days)	Predecessor/s
A	Requirement Analysis	5	-
B	Systems Design	15	A
C	Programming	25	B
D	Telecoms	15	B
E	Hardware Installation	30	B
F	Integration	10	C, D
G	System Testing	10	E, F
H	Training / Support	5	G
I	Handover and Go-Live	5	H

a) Determine the critical path of the project. [6 Marks]

b) Calculate the planned duration of the project in weeks. [2 Marks]

c) Identify non-critical tasks and the float (free slack) on each. [2 Marks]

Q6 Using the information in Table 2, draw a network diagram.

Activity Label	Normal time (days)	Crash time (days)	Normal Cost (Rs.)	Crash Cost (Rs.)	Predecessor Activities
A	5	3	500	1100	-
B	18	15	900	2300	A
C	12	9	2500	3000	A
D	9	7	500	650	B
E	15	12	3000	5000	B
F	12	10	4000	5000	C, D
G	20	15	3600	4800	E, F

a) Calculate the normal project completion time and cost.

[2 Marks]

b) If you want to complete this project in 56 days, what activities should be reduced and by how many days?

[6 Marks]

c) What is the minimum cost to ensure that this project is completed in 56 days?

[2 Marks]