

Eastern University, Sri Lanka

**EASTERN UNIVERSITY, SRI LANKA**  
**FACULTY OF COMMERCE AND MANAGEMENT**  
**PART III EXAMINATION IN BACHELOR OF BUSINESS**  
**ADMINISTRATION & COMMERCE 2002/2003 (REPEAT)**

**BBA 405 PROJECT MANAGEMENT**

Answer five questions including question no. 01

Time: 03 hour

1. **GTZ Engineering Company**

**Background**

GTZ Ltd is a light engineering company, which produces a range of components, machine tools and electronic devices for the motor and aircraft industry. It employs about 1000 people in 12 main divisions. The company operates a 50- week working years.

GTZ Ltd produces two types of alarm systems, one for office and homes (X) and other for motor vehicles (Y), using the same equipment. For financial reasons, it is important to minimize the costs of production. To match the current stock and demand position at least 100 alarm systems in total are required each week, but the quantity of one type must not exceed twice that of the other. The inputs necessary for the manufacture of one alarm system are given below, together with the availability of resource each week.

Type	Plating	Circuitry	Assembly
X	3 feet	4 units	20 minutes
Y	2 feet	8 units	08 minutes
Total available each week	420 feet	800 units	34 hours

The management accountant estimates that the unit costs of production are Rs. 100 for X and Rs. 80 for Y. Past experience suggests that all alarm can be sold. At present, 75 of each alarm system are produced each week.

### a) Machine Tools

One of the machine tools manufactured is ART, which has a steady demand of 100 units a week throughout the working year. Set-up costs of Rs. 1000 are incurred each time a production run is started, and variable costs of production per unit are Rs 40. When production is running, 500 units a week can be made. Stockholding costs are Rs 10 per unit per year. The company is considering buying in ART from an outside supplier for Rs 50 per unit, with order costs pro order placed of Rs 100, stockholding costs would remain at Rs 10 per unit per year

### b) Quality of car tools

The machine tools division makes various car tools and they all have to be produced to an accurate specification. One of these, RTI, is required to have a nominal gauge of 80-mm. When the process is under control, large quantities of RTIs are produced with a mean gauge of 80mm and a standard deviation of. 06mm. The process is monitored by taking a random sample of 36 tools every fifteen minutes.

### c) Metal box machine

GTZ Ltd plans to produce metal boxes in the foreseeable future. For this purpose it uses a machine which produces constant annual revenue. The operating costs and scrap value (Rs.000) are as follows.

Age of machine	1	2	3	4	5	6
Operating costs	1000	1500	2000	2500	3500	5000
Scrap value	3000	1800	1000	500	300	0

The company currently plans to replace the machine when it becomes obsolete, after six years. A replacement machine is expected to cost Rs. 50,00,000, whenever it is purchased.

**d) Mail order operation**

The company has recently set-up a mail order operation to sell direct to the public yourself products. One such product is a multi- purpose adjustable spanner with various gadgets attached. As an experiment, three different prices have been tried, each for one week, with the following results.

Price per unit (Rs)	7	9	12
Units sold (week)	1050	950	800

The fixed costs of this part of the mail order operation are Rs. 2000 per week. Variable costs of production are Rs. 4 per unit plus insurance costs of 2% of the square of the quantity sold.

**e) Surveillance equipment**

There is an expanding market for industrial security equipment. GTZ Ltd manufactures a variety of listening devices, miniature transmitters etc, which are available as free-standing items or embedded in everyday objects like calculators and briefcases. Some data for the numbers of transmitters (TRI) produced and their associated production costs (Rs.000) for the last twelve months are given below.

Month	1	2	3	4	5	6	7	8	9	10	11	12
Production	60	100	140	10	40	200	220	120	20	160	80	240
Costs	22	29	33	8	18	37	38	31	12	35	26	39

Based on the above case information answer the following questions

1. a) Calculate the age at which the metal box machine should be scrapped and replaced, assuming the cost of capital is 10% and explain your answer.

(18 Marks)

b) What constant annual revenue should this machine earn to break even?

(10 Marks)

(Total 28 Marks)

2. a) Define and differentiate the terms "project" and project management".  
(04 Marks)
- b) Identify and explain the characteristics of a project.  
(06 Marks)
- c) Explain the different types of projects giving appropriate examples.  
(08 Marks)
- (Total 18 Marks)
3. a) Define project formulation and explain the need for project formulation.  
(08Marks)
- b) Identify and explain the factors to be considered in preparing a typical feasibility report for a project.  
(10Marks)
- (Total 18 Marks)
4. a) Discuss the role of an effective appraisal system in the development of a project and list and explain the aspects of should consider when appraising a project..  
(12 Marks)
- b) Explain the main purpose of project evaluation and what they seeks to answer.  
(06 Marks)
- (Total 18 Marks)
5. a) "Project is a discrete economic endeavour to achieve development". Based on the above s statement explain how e economic d evelopment c ould be e achieved t hough projects?  
(08 Marks)
- b) Develop a programme project hierarchy for a selected project and explain its usefulness in project planning.  
(10 Marks)
- (Total 18 Marks)

6. An Engineering Association prepares and distributes an annual programme. The programme gives dates of meetings and a list of speeches with summaries of their talks. Also included is an up to- date list of paid up members. The activities to be carried out to complete the programme are as follows.

	Activity	Preceding activity	Normal duration (in days)
A	Select dates for programme	-	4
B	Secure agreement from speaker and prepare summarized of their talks	A	12
C	Obtain advertising material for programme	A	11
D	Mail membership renewal notice	-	20
E	Prepare list of paid up members	D	6
F	Send membership list to printer and read proofs	B,C,E	7
G	Print and assemble programme	F	10
H	Obtain computer printed address levels of members	E	5
I	Send out programme	G,H	4

- a Determine the critical path and the project duration. (04 Marks)
  - b Calculate the total float of each activity (04 Marks)
  - c If each activity requires one member of the office staff of the association, so that the activities may be completed in the estimated times. What is the minimum number of staff that should be allocated to the scheme? (04 Marks)
  - d What will be the effect on the total project time, if the maximum availability of the staff is two? (06 Marks)
- (Total 18 Marks)**

7. Uniliver Limited has four plants. Which can manufacture the following five products. Production cost differs from one to another and so do sales revenue.

Sales revenue ('000) per product

Products

Plant	1	2	3	4	5
A	75	93	74	87	92
B	85	95	76	99	86
C	80	92	78	95	97
D	83	90	79	94	96

Production cost ('000) per product

Products

Plant	1	2	3	4	5
A	74	85	70	86	85
B	80	88	70	94	79
C	77	87	74	93	94
D	65	89	73	91	92

Based on the above information suggest the management of Uniliver limited which product each plant should produce to maximize profit.

(Total 18 Marks)

8. Write short notes for the following.

- a) Project life cycle
- b) Project Identification
- c) Means – ends analysis
- d) Project Appraisal
- e) Resource allocation
- f) Feasibility studies

(3X6 = 18 Marks)