

(4)



The Open University of Sri Lanka  
Faculty of Engineering Technology  
Department of Electrical and Computer Engineering

Study Programme : Bachelor of Software Engineering Honours  
Name of the Examination : Final Examination  
**Course Code and Title : EEM5860/ECM5360 Management and Professional Issues**  
Academic Year : 2017/18  
Date : 18<sup>th</sup> February 2019  
Time : 0930 h-1230 h  
Duration : **3 hours**

**General instructions**

1. Read all instructions carefully before answering the questions.
  2. This question paper consists of **Eight (8)** questions in **four (4)** pages.
  3. Answer any **Five (5) questions** only. All questions carry equal marks.
  4. Answer for each question should commence from a new page.
  5. This is a Closed Book Test (CBT).
  6. Answers should be in clear hand writing.
  7. Do not use red colour pen.
-

- Q1 Select your own place of employment or any other organization from where you can collect information easily.
- (a) Describe the different types of communication networks available in the selected organization. (5 marks)
- (b) Draw the process diagram of communication. (5 marks)
- (c) Discuss informal communication systems prevailing in an organization. Explain how such informal communication systems influence the smooth functioning of a formal organization. (10 marks)
- Q2 "Planning is the fundamental activity among all other managerial functions and it directs the activities towards the achievement of the goals". It can be seen that planning is not limited only to the top level managers. Managers at other levels are required to do some kind of planning in their respective areas of work.
- You are required to explain the different types of plans to be prepared according to the levels of managers in an organization. Use an example to elaborate your answer. (20 marks)
- Q3 (a) Using hypothetical examples, explain how the marketing mix concept could be applied to make an organization a profitable business venture. (10 marks)
- (b) Explain the variables that you would consider in segmenting the Software market. (10 marks)
- Q4 Transactions took place in Ms. Jenuli Sehasna's business, during the month of June 2018 are given below.
- Put the following transactions into the accounting equation. State whether it is increase (+) or decrease (-). See the example below. (20 marks)

*The owner invested money to the business Rs.500,000*

$$\begin{array}{ccccccc} A & = & E & + & L \\ +500,000 & = & +500,000 & + & L \end{array}$$

- 1) The business bought a motor vehicle Rs.75, 000 on cash.
- 2) The business took a bank loan Rs.100, 000.
- 3) The business purchased goods Rs.150, 000 on credit.
- 4) The business purchased goods Rs.200, 000 on cash.
- 5) Sold the goods worth Rs.80, 000 for Rs.100, 000 on credit.
- 6) Sold the goods worth Rs.50, 000 for Rs.85, 000 on cash.
- 7) Received money from debtors Rs.75, 000.
- 8) Paid money for creditors Rs.100, 000.
- 9) Paid house rent Rs.60, 000.
- 10) Received income Rs.80, 000.
- 11) Paid electricity bill Rs.36, 000.
- 12) Purchased furniture Rs.70, 000.

- 13) Owner withdraws Rs.25, 000 for personal use.  
 14) Donated Rs.5, 000 worth goods.  
 15) Received Rs.120, 000 incomes.

Q5 Followings are the extractions of the assets and liabilities of the books of accounts of Vidumini Enterprises as at 01/04/2017 and 31/03/2018.

Description	Assets/Liabilities as at 01/04/2017	Assets/Liabilities as at 31/03/2018
Land Buildings	450,000	560,000
Plant and machinery	310,000	470,000
Office Equipment	190,000	260,000
Investments	100,000	150,000
Inventories	90,000	60,000
Trade Receivables	45,000	67,000
Cash and Bank Balances	15,000	19,000
Bank Loan	33,000	28,000
Trade payables	14,000	11,000
Accrued wages	10,000	13,000
Accrued Expenses	19,000	13,000
Other Liabilities	14,000	8,000

**Following additional information is provided.**

- Additional capital introduced by Mr. Dharmasena owner of Vidumini Enterprises during the year 2017/18 is Rs.80,000/-.
- Mr. Dharmasena had drawn Rs.50, 000/- in cash and Rs.60, 000/- worth of goods for his personal use during the year of 2017.
- You can assume assets have been stated to the net book value.

Using the above information, you are required to calculate and prepare followings.

- Net profit for the year ended 31/03/2018. (10 marks)
  - Balance Sheet as at 31/03/2018. (10 marks)
- Q6
- State the reasons for keeping inventories of goods. (2 marks)
  - What are the main cost components in maintaining inventories? (2 marks)
    - Graphically illustrate the variation of different cost components and the total cost with the order quantity of an inventory. (3 marks)
  - Explain with the aid of a graphical illustration, how stock level varies in lot size (Economic Order Quantity) model of inventory. (3 marks)
    - What assumptions are made in the lot size model of inventory model? (2 marks)

- (d) Following are the information related to inventory of an item maintained by a company.

Annual demand forecast of the item = 12,000 units

Ordering cost = Rs. 450 per order

Holding cost = Rs. 7.50 per item per year

- (i) Find out the order quantity using lot size model. (4 marks)
- (ii) If the supplier of the item provides discounts based on order quantity as given below, find out the order quantity for minimum costs. (4 marks)

Lot size	Unit price (Rs)
1 – 999	30
1000 – 1499	28
1500 – 1999	26
2000 and above	25

You may use the following equation with usual notation.

$$Q = \sqrt{\frac{2AD}{h}}$$

- Q7 (a) Explain the Linear Programming tool as an optimization technique in managing resources with limitations. (4 marks)
- (b) An appliance manufacturer produces two types of electric ovens, designated as O1 and O2. Both models require fabrication and assembly. Each of O1 requires 4 h of fabrication and 2 h of assembly, and each of O2 requires 2 h of fabrication and 6 h of assembly. The manufacturer can allocate only 600 h for fabrication and 480 h for assembly in the next month due to other operations. It has been estimated that profits of O1 and O2 are \$ 40 and \$ 30 respectively.
- (i) Formulate a linear programming problem using above data. (8 marks)
- (ii) Using graphical method, determine the planned production quantities of O1 and O2 to maximize the profit, assuming no limitation on demand for both O1 and O2. (8 marks)
- Q8 (a) Differentiate between the 'law of demand' and the "change in demand". Use illustrations to explain your answer. (10 marks)
- (b) How will the following changes affect the market conditions of the relevant good? Explain using demand and supply analysis. (10 marks)
- Price of petrol has come down, market for petrol
  - Price of sugar has gone up, market for tea
  - Price of coconut has come down, quantity of coconut supplied to the market
  - Adverse weather condition has affected to the tea cultivation, market for tea