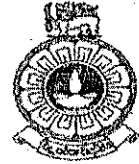


THE OPEN UNIVERSITY OF SRI LANKA
Faculty of Engineering Technology
Department of Electrical & Computer Engineering



Bachelor of Software Engineering (Honours)

Final Examination (2016/2017)
ECM5360: Management and Professional Issues

Date: 25th November 2017 (Saturday)

Time: 9:30 am – 12:30 pm

Instructions

1. *This question paper consists of 8 (eight) questions*
2. *All questions carry equal marks*
3. *Answer any 5 (five) questions*

Question No (01)

- a) What is an Organization? How would you categorize the environment of a business organization?
(10 Marks)
- b) Discuss in what ways an organization interacts with and depends upon its environment. Your answer should include the major components of the organizational environment. Use an example to support your answer.
(10 Marks)

Question No (02)

- a) What do you mean by management process? Discuss with the help of a diagram.
(10 Marks)
- b) Why planning is important? Take any one of the Sri Lankan business organizations of your choice and discuss the types of plans used by each level of planning?
(10 Marks)

Question No (03)

- a) Explain briefly why marketing is needed for an organization.
(10 Marks)
- b) What is marketing mix? Briefly explain each category and discuss its uses to management decision making.
(10 Marks)

Question No (04)

The Trial Balance of Amal Enterprises is sole proprietorship run by Mr. Amal as on 31st March 2017 is as follows.

	Rs.	Rs.
Sales		1,200,000
Capital		600,000
Purchases	685,000	
Goods Carrying Cost	40,000	
Inventory as at 01.04.2016	30,000	
Land and Building at cost	500,000	
Plant and Machinery at cost	550,000	
Motor vehicle at cost	350,000	
Land and Building		250,000
Plant and Machinery		140,000
Motor vehicle		240,000
Debtors	120,000	
Provision of doubtful debts as at 01.04.2016		16,000
Drawings	15,000	
Cash in Hand	20,200	
Salary paid	80,000	
Rent paid	60,000	
Insurance paid	50,400	
Water Bill paid	24,400	
Creditors		52,000
Bank Overdraft		27,000
	<u>2,525,000</u>	<u>2,525,000</u>

Additional Information:

- i. Inventory as at 31.03.2017 was valued at Rs.175, 000.
- ii. Provision of depreciation rates as at 01.04.2016 are as follows.

Land and Building	10%
Plant and Machinery	20%
Motor vehicle	5%
- iii. Provision for bad debt should 10% of the year end debtor balance

You are required to prepare following two statements.

- (i) Trading and profit & loss account for the year ended 31.03.2017.
- (ii) Balance sheet as at 31.03.2017

(20 Marks)

Question No (05)

Enter the following transactions into the accounting equation as shown in an example below. State whether it is an increase (+) or a decrease (-).

E.g.1. The owner invested money to the business Rs.1,000,000

$$\text{Non-Current Assets} + \text{Current Assets} = \text{Capital} + \text{Non-Current Liability} + \text{Current liability}$$

$$+1,000,000 = +1,000,000$$

- 1) The business bought a Land for Rs.200, 000 on cash
- 2) The business took a bank loan of Rs.500,000
- 3) The business purchased goods for Rs.250, 000 on cash
- 4) The business purchased goods for Rs.300, 000 on credit
- 5) Sold the goods worth of Rs. 150,000 for Rs.200, 000 on credit
- 6) Sold the goods worth of Rs.175, 000 for Rs.215, 000 on cash
- 7) Received money from debtors Rs.250,000
- 8) Paid money for creditors Rs.200,000
- 9) Paid house rent Rs.50,000
- 10) Received income Rs.75,000
- 11) Paid electricity and water bills of Rs.55,000
- 12) Purchased furniture for Rs.120,000
- 13) Owner withdraw Rs.25,000 for personal use
- 14) Donated Rs.5,000 worth of goods
- 15) Received Rs.120,000 Income

(20 Marks)

Question No (06)

- a) Briefly discuss the purpose of activity network analysis in project management. (5 Marks)
- b) A project consists of several activities and their durations and preceding activities are given in the Table below.

Activity	Duration (weeks)	Preceding activities
A	4	-
B	2	A
C	3	A
D	5	A
E	4	A
F	2	B
G	2	C
H	3	B
I	1	H
J	2	D, G
K	3	E, F
L	4	I, J, K

- (i) Construct network diagram for the above project indicating earliest and latest event times for each activity. (10 marks)
- (ii) Find out the critical activities of the project and the project duration. (5 marks)

Question No (07)

- a) Graphically illustrate the buildup model of inventory control showing important parameters. (4 marks)
- b) Total annual cost of an inventory is the sum of (1) annual ordering cost and (2) annual inventory holding cost. Show that the total annual inventory cost for a buildup model is given by the following equation. (4 marks)

Where
$$T(Q) = \frac{DA}{Q} + \frac{hQ}{2} \left(1 - \frac{d}{p}\right)$$

Q = Batch size

D = Annual demand

A = Ordering cost per batch or machine setting up cost per batch

h = Annual inventory holding cost per unit of an item

d = consumption rate

p = Acquisition or production rate

Hence show that the optimum batch size (Q^*) is given by the following equation.

$$Q^* = \sqrt{\frac{2AD}{h}} \sqrt{\frac{p}{p-d}}$$

- c) A company assembling television sets purchases a certain item from outside. Each television set needs one purchased item. Once the order is placed for the item, supplier delivers the items on weekly basis.

Calculate the following with the information provided below. (12 marks)

- (i) Optimum order quantity
(ii) Total annual inventory cost
(iii) Maximum stock level

Demand for television sets = 4000 units per year

Ordering cost = Rs. 500 per order

Inventory holding cost = Rs.5.00 per item per year

Consumption rate of the item = 12 per week

Rate of supply of the item = 60 per week

Question (08)

- a) Differentiate between the shift of the demand curve and movement along the demand curve. (10 marks)
- b) Using the demand and supply analysis explain the impact of the following given situations to the market. (10 marks)
- (i) Price of sugar goes up; market for sugar
(ii) Adverse weather conditions affected to tea cultivation; market for tea
(iii) Price of a kilo of paddy goes up; supply of paddy to the market
(iv) Income level of general public goes up; market for refrigerators

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