BINDURA UNIVERSITY OF SCIENCE EDUCATION

FACULTY OF COMMERCE

DEPARTMENT OF ACCOUNTANCY

PROGRAMMES:

Bachelor of Accountancy (Honours) Degree

COST AND MANAGEMENT ACCOUNTING 3 (AC417)

EXAMINATION PAPER

DURATION: 3 HOURS

INSTRUCTIONS TO CANDIDATES:

1. Answer all questions.
2. No cell phones are allowed in the examination venue.
3. Use of silent and non-programmable calculators is allowed.

SECTION A : 30 marks

1. The following costs have arisen in relation to the production of a product:
(i) Planning and concept design costs

(ii) Testing costs

(iii) Production costs

(iv) Distribution and customer service costs

In calculating the life cycle costs of a product, which of the above items would be included?

A (iii) only

B (i), (ii) and (iii) only

C (i), (ii) and (iv) only

D All of the above

2. Which method of pricing is most easily applied when two or more markets for the product or service can be kept entirely separate from each other?

A Price discrimination

B Product line pricing

C Skimming

D Volume discounting

3. Tech World is a company which manufactures mobile phone handsets. From its past experiences, Tech World has realised that whenever a new design engineer is employed, there is a learning curve with a 75% learning rate which exists for the first 15 jobs. A new design engineer has just completed his first job in five hours. Note. At the learning rate of 75%, the learning factor b is equal to -0·415. How long would it take the design engineer to complete the sixth job?

A 2.377 hours

B 1.442 hours

C 2.564 hours

D 5 hours

4. A company operates in export and import markets, and its operational cash flows are affected by movements in exchange rates, which are highly volatile. As a result, the company has great difficulty in establishing a budgeting system that is reliable for more than three months ahead. Which

of the following approaches to budgeting would be most appropriate for this company's situation?

A Flexible budget

B Incremental budget

C Rolling budget

D Zero based budget

5. The learning curve effect of an organization could be extended by which of the following?

A Increasing staff turnover

B Increasing the level of staff training

C Allowing extended breaks in production

D Introducing a new mechanised process

6. A company has a call centre to handle queries and complaints from customers. The company is concerned about the average length of calls and the time that it takes to deal with customers. As part of its balanced scorecard, it has set a target for reducing the average time per customer call. A target for reducing the average time per call would relate to which one of the four balanced scorecard perspectives?

A Customer perspective

B Financial perspective

C Innovation and learning perspective

D Internal business (operational) perspective

7. Which of the following is not usually a consequence of divisionalisation?

A Duplication of some activities and costs

B Goal congruence in decision making

C Faster decision making at operational level

D Reduction in head office control over operations

8. A company has $20 million available for investing in projects.

Projects	Investment ($m)	Present value($m)	NPV($m)
A	2.5	3.25	0,75
B	10	10.825	0,825
C	5	7.575	2,575
D	10	12.35	2,35
E	12.5	13.35	0.85
F	2.5	3	0.5

G	5	5.9	0.9

Which investment portfolio would you recommend to maximise profit?

A. C,D and G
B. C,D and F
C. C,A D and F
D. E,F and G

9. The following information relates to the expected cost of a new product over its expected three-year life.

	Year 0	*Year 1*	*Year 2*	*Year 3*
Units made and sold		25,000	100,000	75,000
R&D costs	$850,000	$90,000		
Production costs:				
Variable per unit		$30	$25	$20
Fixed costs		$500,000	$500,000	$500,000
Selling and distribution costs:				
Variable per unit		$6	$5	$4
Fixed costs		$700,000	$500,000	$300,000
Customer service costs :				
Variable per unit		$4	$3	$2

What is the expected average life cycle cost per unit?

A $35.95
B $46.25
C $48.00
D $50.95

10. You are given the following statements about risk and uncertainty:

(i) Uncertainty be minimised by relying on probability theory
(ii) Uncertainty is uncontrollable
(iii) Past data can be used to minimise uncertainty
(iv) Risk and uncertainty can be illustrated on a decision tree

Which pair of statements are not correct?

A. (i) and (ii)
B. (i) and (iii)
C. (ii) and (iv)
D. (i) and (iv)

11. Use the information below to answer question 11, 12 and 13.
A fruit vendor who sells bananas, mangoes, oranges and cucumbers supplies you with the following table which summarises her expected profit/(loss) about tomorrow's trading day given different states of nature:

States of nature	Bananas	Mangoes	Oranges	Cucumbers
Bad	($250)	($300)	($75)	($150)
Poor	($50)	($60)	($25)	($75)

Fair	$150	$100	$50	$25
Good	$250	$200	$100	$110

Which fruit will the fruit vendor decide to buy if she uses the Maximin approach?

A. Bananas
B. Mangoes
C. Oranges
D. Cucumbers

12. Which fruit will the vendor decide to buy if she uses the Maximaxi approach?
A. Bananas
B. Mangoes
C. Oranges
D. Cucumbers

13. Which fruit will the fruit vendor decide to buy if she uses the minimax regret approach?
A. Bananas
B. Mangoes
C. Oranges
D. Cucumbers

14. XYZ Ltd has approached you regarding a suitable quantity to maximise profit. You are supplied with the following information about the company's product and capacity:
-Between 10 and 13 units can be assembled in a week.
-Marketing department estimates that at a price of $8 000, no products can be sold but for each $150 reduction in price, one additional unit per week will be sold.
-Fixed costs associated with manufacture are $12 000 per week.
-Variable costs are expected to be $4 000 per product for each of the first 10 units, thereafter they increase by $400 per unit more than the preceding one. What is the most profitable output per week?
A. 10 units
B. 11 units
C. 12 units
D. 13units

15. Which statement below best explains price-skimming strategy?

A It is the concept of initially charging a low price initially to gain market acceptance

B. It is an attempt to exploit customers who are insensitive to price changes

C. It is charging different prices to different market segments

D. It is pricing above competition on a permanent basis because the product is exclusive.

SECTION B: 70 marks

Question1

A public address system manufacturer has developed a new generation of Karaoke equipment and is anxious to obtain the maximum profits from its development. It has the opportunity to manufacture the product itself, to subcontract and collect a royalty based on sales or sell the rights for a lump sum. There is a 10% chance of high sales, 30% chance of medium, and 60% chance of low sales.

If the firm manufactures, then there is a 50% chance of further successful development, but this will only be pursued if sales are medium or above. The cost of development is $15 million with high returns of $45 million and medium of $25million.

Expected profits are as follows: (all figures in $millions)

	Manufacture	Royalty	Sell rights
High sales	80	30	13
Medium sales	35	18	13
Low Sales	(5)	12	13

REQUIRED

a) Using a decision tree or expected value table show what the company should do. (15 marks)

b) Comment on any non-financial factors that the company should take into account in making its decision. (5marks)

[Total : 20 marks]

Question2

Eureka College is considering investing in its own buses to ferry staff and students. Presently, this service is contracted to an outside organization. The expected life of the buses would be five years, after which the buses would be disposed off. In 2020, Eureka College used $1 000 000 for renting the transport. This cost is projected to rise at 8 % per annum from 2021 to 2025. The cost of the buses would be $3,700 000 in total and it is expected that the following ancillary costs would be incurred over the next five years.

Year	Bus crew's costs	Repairs and maintenance	Other costs
	$	$	$
2021	105,000	35,000	527,000
2022	135,000	47,000	555,000
2023	150,000	65,000	630,000
2024	165,000	80,000	645,000
2025	180, 000	87,000	720,000

Other costs include depreciation. It is projected that the buses would be sold for $950,000 at the end of year 5. It has been agreed to depreciate the buses at a rate of 10% reducing balance method.

To raise funds for the project Eureka College is proposing to raise a long-term loan at 8% per annum.

You are told that there is an alternative project that could be invested in using the funds raised, which has the following projected results:

Payback period = 3 years

Accounting Rate of Return = 19% (using average capital employed)

Net present value = $980,000.

As funds are limited, investment can only be made in one project.

Note: The buses would be purchased at the beginning of the project and all other expenditure would be incurred at the end of each relevant year. Round off balances to the nearest $1.

Required:

(a) Prepare a table showing the net cash savings to be made by the College over the life of the project (5 marks)

(b) Calculate the following for acquisition of the buses:

(i) Payback period (3 marks)

(ii) Accounting rate of return (5 marks)

(iii) Net present value (7 marks)

(c) What should be done by Eureka College? Outline any other non- financial factors to be considered (5 marks)

[Total: 25 marks]

Question 3

Tablet Co makes two types of tablet computer, the X and the Y. X currently generates a contribution of $30 per unit and Y generates a contribution of $40 per unit. There are three main stages of production: the build stage, the program stage and the test stage. Each of these stages requires the use of skilled labour which, due to a huge increase in demand for tablet computers over recent months, is now in short supply. The following information is available for the two products:

Stage	X	Y
	Minutes per unit	**Minutes per unit**
Build ($10 per hour)	24	20
Program ($16 per hour)	16	14
Test ($12 per hour)	10	4

Tablet Co is now preparing its detailed production plans for the next quarter. During this period it expects that the skilled labour available will be 30,000 hours (1,800,000 minutes) for the build stage, 28,000 hours (1,680,000 minutes) for the program stage and 12,000 hours (720,000 minutes) for the test stage. The maximum demand for X and Y over the three-month period is expected to be 85,000 units and 66,000 units respectively. Fixed costs are $650,000 per month.

Due to rapid technological change, the company holds no inventory of finished goods.

Required:

(a) On the graph paper provided, use linear programming to calculate the optimum number of each product which Tablet Co should make in the next quarter assuming it wishes to maximise contribution. Calculate the total profit for the quarter. **(20 marks)**

(b) Calculate the amount of any slack resources arising as a result of the optimum production plan and explain the implications of these amounts for decision-making within Tablet Co. **(5 marks)**

[Total marks: 25]

END OF EXAMINATION PAPER