SERIES 4 EXAMINATION 2005

COST ACCOUNTING

LEVEL 3

(Code No: 3016)

FRIDAY 11 NOVEMBER

Instructions to Candidates

*(a) The time allowed for this examination is **3** hours.*

*(b) Answer **5** questions.*

(c) All questions carry equal marks.

(d) All answers must be clearly and correctly numbered but need not be in numerical order.

(e) Your answers should be written in blue or black ink/ballpoint. Pencil may be used only for graphs, charts, diagrams, etc.

(f) Presentation is important.

(g) Candidates may use calculators provided the calculators give no printout, have no word display facilities, are silent and cordless. The provision of batteries and responsibility for their condition must rest with the candidate.

(h) It is recommended that candidates show essential workings.

QUESTION 1

Triple Products Ltd manufactures three products Alpha, Beta and Gamma. At present the company uses a traditional absorption costing system to establish the costs of production. Budgeted production data for the next period is as follows:

	Alpha	**Beta**	**Gamma**
Production output (units)	500	400	200
Material per unit @ £5.00 per kg	10kg	20kg	16kg
Labour per unit @ £9.00 per hour	2hrs	2hrs	3hrs
Machine time per unit	2hrs	1.5hrs	2hrs

Budgeted production overheads for the period are £76,300 absorbed on a machine hour basis.

Further investigation of this production overhead figure, has revealed the following activities and related overhead costs:

Activities	**Costs (£)**
Product inspection	32,000
Machine set-up	16,000
Machine maintenance	12,000
Product despatch	8,200
Material handling	8,100
	76,300

Other information

(1) Orders budgeted: Alpha 10 orders; Beta and Gamma 5 orders each. Each order is expected to require one machine set up and two inspections.

(2) Machine maintenance is carried out regularly based on a predetermined number of machine running hours.

(3) Each product is packed and despatched in crates containing the following number of products per crate: Alpha 20 units, Beta 50 units and Gamma 25 units. The number of crates used influences product despatch costs.

(4) Material handling costs are influenced by the quantity of material used.

REQUIRED

(a) Calculate the production cost of one unit of each product using:

(i) Traditional absorption costing (6 marks)

(ii) Activity based costing. (10 marks)

(b) Explain the meaning of the term cost driver. Your explanation should include **2** examples to illustrate your answer.

(4 marks)

(Total 20 marks)

QUESTION 2

Easy Travel is a transport business operating six passenger vehicles. The business, owned solely by T Hope and located in rented premises, employs one full time administration officer. T Hope acts as Transport Manager and drivers are contracted from an agency on the basis of individual jobs. The business operates Type A vehicles and Type B vehicles.

It is budgeted that each vehicle will complete 48,000 km per year.

The following additional information is provided regarding the business:

Vehicle data	**Type A**	**Type B**
Number of vehicles	2	4
Number of seats per vehicle	48	15
Number of tyres per vehicle	6	4

Vehicle costs		
Purchase price per vehicle	£60,000	£23,000
Trade-in value per vehicle (after 5years)	£2,800	£1,000
Road fund licence (per vehicle per year)	£800	£400
Insurance (per vehicle per year)	£1,600	£800
Servicing (every 12,000 km per vehicle)	£300 per service	£200 per service
Tyres (renewed per 48,000 km)	£200 per tyre	£100 per tyre
Fuel consumption (at £0.80 per litre)	1 litre per 3 km	1 litre per 5 km

Depreciation is charged at 20% annually, in equal instalments, on the purchase price of each vehicle *less* the cost of the tyres and *less* its trade-in value after 5 years.

Office costs	
Rent	£12,000 per year
Insurance	£7,400 per year
Administration	£18,000 per year
T Hope (Transport Manager)	£25,000 per year

Office costs are apportioned to vehicle types on the total number of passenger seats.

Agency driver costs

Cost per day **Type A** = £80 **Type B** = £60

Jobs are charged with agency driver costs directly according to time taken.

Both vehicle costs and office costs are absorbed into the cost of jobs at a predetermined rate per kilometre for each type of vehicle

REQUIRED

(a) For **each** vehicle type calculate the:

(i) vehicle cost absorption rate per kilometre (8 marks)

(ii) office cost absorption rate per kilometre. (6 marks)

QUESTION 2 CONTINUED

The following information relates to a job enquiry:

(1) A local club requires transport for 28 passengers to and from a sporting venue.
(2) The distance from the local club to the sporting venue is 200 km.
(3) Both types of vehicle are available for the job.
(4) The job can be completed in one day.

REQUIRED

(b) Calculate the cost to transport the 28 passengers **to** and **from** the sporting venue assuming:

(i) Type A vehicle is used

(ii) Type B vehicles are used. (6 marks)

(Total 20 marks)

QUESTION 3

A company plans to sell 120,000 units of its single product, in a period at a selling price of £15 per unit. Fixed overheads and net profit for the period are expected to be £440,000 and £520,000 respectively using the existing production process.

The company is considering a change to its production process. The change would increase the fixed overheads to £700,000 in the period and reduce the variable costs to £5 per unit. The selling price will remain constant regardless of production process.

Production capacity in both the existing and changed processes would be 150,000 units in the period.

REQUIRED

(a) For the existing production process, calculate for the period the expected:

(i) breakeven point in units (4 marks)

(ii) margin of safety as a % of sales (1 mark)

(iii) contribution sales ratio. (1 mark)

(b) Advise management, using supporting calculations, whether to change the production process if sales are 120,000 units in the period.

(5 marks)

(c) Advise management, using supporting calculations, of the sales level (units) at which the changed process would become more profitable than the existing process.

(5 marks)

(d) Identify and explain **2** limitations of break-even analysis.

(4 marks)

(Total 20 marks)

QUESTION 4

James is planning to start a new business on 1 January Year 6 by producing and selling a single product. James will invest £30,000 of his own capital of which £15,000 is available at the outset with the balance in July Year 6.

Prior to commencement of the business James intends to purchase factory machinery for £18,000. This purchase will be paid for in January. His bank manager has asked for a cash budget and profit statement to support a loan application.

James has provided the following budgeted information for the first year of trading:

Period (Three months)	**Jan - Mar**	**Apr - Jun**	**Jul - Sep**	**Oct - Dec**
Sales (£)	30,000	36,000	44,000	48,000
Direct materials(£)	6,000	7,200	8,400	9,600
Direct labour(£)	10,000	13,000	14,000	16,000
Selling expenses(£)	4,000	4,500	5,000	5,500

The following other information is available:

(1) Sales, which are all on credit, will be spread evenly within each three month period.
(2) Customers will be allowed a two-month credit period. It is expected that bad debts will account for 1% of the sales value.
(3) All products will be produced in the month of sale.
(4) Direct materials, purchased in the month of production, are payable one month after purchase.
(5) Direct labour is payable in the month incurred
(6) 60% of the selling expenses are payable in the period incurred, the balance being paid in the following period.
(7) Factory overheads, excluding depreciation, are expected to be £8,000 per three month period. 70% of this cost is payable in the period incurred, the balance being paid in the following period.
(8) Office administration overheads of £1,000 per month are expected to be payable one month after being incurred.
(9) Factory machinery is expected to have a 10-year life with no scrap value and will be depreciated in equal instalments over its life.
(10) James has applied for a £20,000 bank loan to be received at the start of business.
(11) No repayment of the loan is expected in the first year of business but interest, at 12% per annum, is payable monthly in the month after it is incurred

REQUIRED

For the first year of trading assuming that the bank loan is received:

(a) Prepare a cash budget for **each** of the three month periods.

(14 marks)

(b) Prepare a single budgeted profit statement.

(6 marks)

(Total 20 marks)

QUESTION 5

A company uses batch production methods to produce a single product by combining two materials Tee and Pee. The company has budgeted for a material mix ratio of 60:40 for Tee and Pee respectively.

The following information relates to each batch:

Direct material input	200kg
Material Tee standard price	£2 per kg
Material Pee standard price	£3 per kg
Standard yield	160kg of product.
The waste generated has no value.	

Actual results for Month 10 were as follows:

Output	16,500 kg	
Material Tee	13,020 kg	£24,738
Material Pee	7,980 kg	£25,536

REQUIRED

(a) Calculate the following variances:

(i) Material price for each material and in total (3 marks)

(ii) Material mix for each material and in total (5 marks)

(iii) Material yield in total. (4 marks)

(b) Explain the meaning of:

(i) Material mix variance (2 marks)

(ii) Material yield variance (2 marks)

(c) Calculate the material usage variance and reconcile this with the appropriate variances calculated in (a) above.

(4 marks)

(Total 20 marks)

QUESTION 6

A manufacturing company operates a non-integrated accounting system. At the end of Month 1 of the financial year the following reconciliation statement was prepared.

	£	£
Profit as per cost accounts		29,000
Add:		
Raw material closing stock difference	1,200	
Work-in-progress opening stock difference	500	
Finished goods opening stock difference	2,500	
Selling and distribution overheads over absorbed	900	
Production overheads over absorbed	3,500	
Notional rent charge	7,500	16,100
Deduct:		
Raw material opening stock difference	1,100	
Work-in-progress closing stock difference	800	
Finished goods closing stock difference	2,600	
Administration overheads under absorbed	1,500	6,000
Profit as per financial accounts		39,100

In the cost ledger, overheads are absorbed as follows:

Production overheads	£12.50 per direct labour hour.
Administration overheads	10% of sales
Selling and distribution overheads	6% of sales

Any over/under absorbed overhead balance at the end of a month is carried forward to the following month in the cost ledger. Any balance remaining at the end of a financial year is transferred to the Profit and Loss Account.

Sales in Month 1 were £600,000 and 9,000 direct labour hours were worked.

In the financial ledger the following stocks relate to Month 1:

	Opening stock £	Closing stock £
Raw materials	110,000	120,000
Work-in-progress	30,000	40,000
Finished goods	300,000	350,000

REQUIRED

(a) Calculate for Month 1:

(i) The opening and closing stock values in the cost ledger. (9 marks)

(ii) The actual overhead expenditure for each of the three categories. (6 marks)

(b) Suggest a reason why the cost and financial accounting valuations for raw material stock are different.

(3 marks)

(c) Explain what the item **Notional rent charge** means

(2 marks)

(Total 20 marks)

