

STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI – 86
(For candidates admitted from the academic year 2023 – 2024)

B. COM. DEGREE EXAMINATION- APRIL 2024
HONOURS
SECOND SEMESTER

COURSE : MAJOR CORE
PAPER : COST ACCOUNTING
SUBJECT CODE : 23BH/MC/CA24
TIME : 3 HOURS

MAX. MARKS: 100

SECTION A				
Q. No.	Answer all questions:	(5 x 2 =10)	CO	KL
1	Show the format of Material Control Account.		1	1
2	Write a short note on Bottleneck.		1	1
3	Data relating to a particular stores item are as follows: <ul style="list-style-type: none"> • Average daily usage 400 units • Maximum daily usage 520 units • Minimum daily usage 180 units • Lead time for replenishment of inventory 10 to 15 days • Reorder quantity 8,000 units What is the reorder level (in units) that avoids inventory stockouts?		1	1
4	X uses process costing. In Process 3 the normal loss is 4% of total input. Last period the input from Process 2 was 8,500 kg and additional material of 4,250 kg was added to process 3. Actual output to finished goods was 12,700 kg. There was no opening or closing work-in-progress in the period. What was the abnormal gain or loss in kg for period 3?		1	1
5	Company X produces two types of products: Product A and Product B. The activity-based costing system has identified two cost drivers: machine hours for Product A and number of setups for Product B. The total estimated overhead costs for the period are \$50,000. If Product A requires 100 machine hours and Product B requires 5 setups, calculate the overhead cost allocated to each product using activity-based costing.		1	1
SECTION B				
Q. No.	Answer any 4 questions:	(4 x 5 = 20)	CO	KL
6	Explain Target Costing and state its advantages and disadvantages.		1	2
7	A manufacturing company produces widgets at a steady rate of 600 units per month. These widgets are purchased from a supplier at a cost of \$1.50 each. The company incurs a fixed ordering cost of \$25 per order, regardless of the order quantity.		1	2

	<p>The supplier offers a volume discount for large orders. Orders of 2,500 units or more qualify for a 10% discount on the purchase price. The company's current Economic Order Quantity (EOQ) is calculated to be 1,200 units.</p> <p>Additionally, the company incurs holding costs for inventory storage. The total holding cost is calculated at 15% per annum of the value of inventory held.</p> <p>Based on this information, should the company accept the volume discount offered by the supplier?</p>		
8	<p>YZ Ltd manufactures furniture and follows a multi-stage production process. In Process 3, XYZ Ltd conducts quality control checks before proceeding with further production. These checks are expected to result in normal losses of 8% of the input from Process 2. The lost materials are sold as scrap for \$2 per kilogram.</p> <p>The following data pertains to Process 3 for the most recent period:</p> <ul style="list-style-type: none"> • Transfer from Process 2: 600 kilograms at \$900 • Additional materials used in Process 3: 400 kilograms at \$600 • Labour cost: 250 hours at \$1,200 • Overhead expenses: \$700 • Actual output: 630 kilograms <p>Prepare the process account, abnormal loss and gain account, and scrap account for Process 3 for the period just ended.</p>	1	2
9	<p>ABC Ltd manufactures two products, Product X and Product Y. The company has identified three cost drivers: machine setup, material handling, and quality inspections. The following information is available for the current period:</p> <ul style="list-style-type: none"> • Product X requires 10 machine setups, 20 material handling activities, and 15 quality inspections. • Product Y requires 15 machine setups, 25 material handling activities, and 10 quality inspections. • The total overhead costs for the period amount to \$50,000. The company allocates overhead costs based on the following activity rates: • Machine setup: \$200 per setup • Material handling: \$100 per activity • Quality inspection: \$150 per inspection <p>Calculate the overhead cost allocated to each product (Product X and Product Y) using Activity Based Costing (ABC).</p>	1	2
10	<p>A worker in ABC Ltd. is paid a guaranteed wage rate of Rs. 60 per hour. The standard time per unit for a particular product is 4 hours. X, a machine man, has been paid wages under the Rowan incentive plan and had earned an effective hourly rate of Rs. 75 on the manufacture of the particular product. What could have been his total earnings and effective hourly rate, had he been put on Halsey Intensive scheme (50%)?</p>	1	2

11	A transport company operates 10 buses with seating capacity of 60 passengers each on a route 70 kilometers long. Each bus makes 5 round trips per day on all 30 days in a month. Each bus gives a mileage of 20 kms per litre of petrol and the cost of petrol is Rs. 80 per litre. Calculate the following: a. Effective kilometers per month b. Effective Passenger Kms	1	2																								
Q. No.	SECTION C Answer the following questions: (4 x 10 =40)	CO	KL																								
12 a.	A manufacturing company operates with three production cost centres: Delta, Epsilon, and Zeta, and two service cost centres: Facilities (F) and IT Support (ITS). The following table displays the allocation of costs and the relative usage of each service cost centre by other cost centres: <table border="1" data-bbox="321 682 1149 989"> <thead> <tr> <th>Cost Centres</th> <th>Delta</th> <th>Epsilon</th> <th>Zeta</th> <th>Facilities (F)</th> <th>IT Support (ITS)</th> </tr> </thead> <tbody> <tr> <td>Costs (\$)</td> <td>\$5,000</td> <td>\$6,500</td> <td>\$4,200</td> <td>\$3,800</td> <td>\$3,500</td> </tr> <tr> <td>Proportion F (%)</td> <td>20</td> <td>30</td> <td>25</td> <td>-</td> <td>25</td> </tr> <tr> <td>Proportion ITS (%)</td> <td>25</td> <td>25</td> <td>30</td> <td>20</td> <td>-</td> </tr> </tbody> </table> <p>Calculate the total costs allocated to each production cost centre (Delta, Epsilon, and Zeta) using both long and Algebraic method of cost allocation.</p> <p style="text-align: center;">(Or)</p>	Cost Centres	Delta	Epsilon	Zeta	Facilities (F)	IT Support (ITS)	Costs (\$)	\$5,000	\$6,500	\$4,200	\$3,800	\$3,500	Proportion F (%)	20	30	25	-	25	Proportion ITS (%)	25	25	30	20	-	2	3
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12 b.	ABC Corporation has the following inventory transactions for Product X during the month of January: <ul style="list-style-type: none"> • January 1: Beginning inventory - 100 units at \$10 each • January 10: Purchased 200 units at \$12 each • January 15: Sold 150 units • January 20: Purchased 150 units at \$15 each • January 25: Sold 180 units • January 30: Purchased 100 units at \$18 each <p>Using FIFO, LIFO, and weighted average methods, calculate the value of closing inventory and Profit as of January 31st. Assume that the company uses both the periodic and continuous inventory systems. (3 marks for FIFO, 3 marks for LIFO and 4 marks for Weighted Average)</p>	2	3																								
13 a.	LMN Ltd operates a manufacturing process that involves multiple stages. Details of the first process for the month of September are provided below: <ul style="list-style-type: none"> • Opening Work in Process (WIP): 500 units <ul style="list-style-type: none"> ○ Degree of completion: <ul style="list-style-type: none"> ▪ Materials (valued at \$25,000): 100% ▪ Conversion (valued at \$4,500): 40% • Units transferred to Process 2: 2,000 units 	2	3																								

13 b.	<ul style="list-style-type: none"> • Closing WIP: 400 units <ul style="list-style-type: none"> ○ Degree of completion: <ul style="list-style-type: none"> ▪ Materials: 100% ▪ Conversion: 60% • Costs incurred in the period: <ul style="list-style-type: none"> ○ Material: \$120,000 ○ Conversion: \$90,000 <p>Assuming no process losses, prepare the process account for September using the weighted average method and FIFO method.</p> <p>(Or)</p> <p>Beta Corporation manufactures two products, P and Q, in a single joint process. Last month, the joint costs incurred during the production process amounted to \$90,000. During that period, 12,000 units of Product P and 18,000 units of Product Q were produced. Additional processing costs after the split-off point were \$20,000 for Product P and \$15,000 for Product Q. Product P sells for \$15 per unit, while Product Q sells for \$8 per unit.</p> <p>Calculate the Joint cost Allocation using the Physical Units Method, Sales value method and Net realisable Value Method.</p>	2	3
14 a.	<p>(i) ABC Ltd manufactures two products, Product A and Product B, using a single production process. The company has identified three cost drivers: machine setup, material handling, and quality inspections. The following information is available for the current period:</p> <ul style="list-style-type: none"> • Product A requires 15 machine setups, 25 material handling activities, and 20 quality inspections. • Product B requires 20 machine setups, 30 material handling activities, and 15 quality inspections. <p>The total overhead costs for the period amount to \$50,000. The company allocates overhead costs based on the following activity rates:</p> <ul style="list-style-type: none"> • Machine setup: \$200 per setup • Material handling: \$100 per activity • Quality inspection: \$150 per inspection <p>Calculate the overhead cost allocated to each product (Product A and Product B) using Activity Based Costing (ABC). (5 marks)</p> <p>(ii) Discuss the advantages and limitations of using ABC compared to traditional costing methods. Your discussion should cover at least three advantages and three limitations of ABC. Each advantage and limitation should be explained briefly. (5 marks)</p> <p style="text-align: center;">(Or)</p>	3	4

14 b.	<p>You are required to compile a statement showing cost and profit from the information given:</p> <ul style="list-style-type: none"> ○ Materials Purchased: Rs.2,00,000 ○ Wages: Rs.1,00,000 ○ Direct Expenses: Rs.20,000 ○ Opening Stock of Raw Materials: Rs.40,000 ○ Closing Stock of Raw Materials: Rs.60,000 <p>Factory Overhead is absorbed at 20% of wages, Administration Overhead is 25% on works cost, Selling and Distribution Overheads are 20% on Cost of Production and Profit is 20% on Sales.</p>	3	4
15 a.	<p>The following information has been secured for the purpose of estimating for the year 2018 the full operating cost per truck hour applicable to the trucks operated for service department of LMN company. The 2017 actual costs are used to calculate the 2018 rate:</p> <ul style="list-style-type: none"> • Cost of rent, insurance rates etc. pertaining to garage was Rs. 84,000 of which 1/3 was allocated to the service department. • The trucks belonging to the service department represent one-quarter of the trucks handled by the garage. • Foreman of the garage was paid a salary of Rs.24,000. All his time was devoted to the trucks. • Heating and lighting cost of garage is Rs.12,000 • Other running expenses (fluctuation with the truck operating hours) amounted to Rs.8,400 for the 8 trucks in the service department. • The trucks operated 50 hours a week for 52 weeks each year. During the working hours each of the truck is laid down for 100 hours, per year for repairs and maintenance. As a result of strike in October, the garage was shut for 2 weeks. • Cost of each truck was Rs.1,20,000 and its scrap value estimated at Rs.12,000. The life of the truck is estimated at 10,000 operating hours. • The estimated repairs over the life of a truck are expected to amount to Rs.40,000. • Drivers' wages paid amounted to Rs.1,20,000 for the year. <p>Estimate the applicable rate per hour to be used to reflect the full operating cost for 2018 for the trucks operating in the service department of the LMN company.</p> <p style="text-align: center;">(Or)</p>	3	4

15 b.	<p>From the following data given, calculate the labour turnover rate by applying:</p> <ul style="list-style-type: none"> i. Separation method (3 marks) ii. Replacement Method (3marks) iii. Flux Method (4 marks) <p>No. of workers on payroll: At the beginning of the month – 900 At the end of the month – 1,100</p> <p>During the month 10 workers left, 40 workers were discharged and 150 workers were recruited. Of these 25 workers are recruited in the vacancies of those leaving, while the rest were engaged for an expansion scheme.</p>	3	4																																																		
SECTION D																																																					
Q. No.	Answer any one question: (1 x 15 = 15)	CO	KL																																																		
16	<p>Justin Thyme manufactures four products, A, B, C and D. Details of sales prices, costs and resource requirements for each of the products are as follows.</p> <table border="1" data-bbox="321 865 1112 1184"> <thead> <tr> <th></th> <th>Product A</th> <th>Product B</th> <th>Product C</th> <th>Product D</th> </tr> <tr> <th></th> <th>\$</th> <th>\$</th> <th>\$</th> <th>\$</th> </tr> </thead> <tbody> <tr> <td>Sales Price</td> <td>1.40</td> <td>0.80</td> <td>1.20</td> <td>2.80</td> </tr> <tr> <td>Material Cost</td> <td>0.60</td> <td>0.30</td> <td>0.60</td> <td>1</td> </tr> <tr> <td>Direct labour Cost</td> <td>0.40</td> <td>0.20</td> <td>0.40</td> <td>1</td> </tr> </tbody> </table> <table border="1" data-bbox="321 1220 1149 1486"> <thead> <tr> <th></th> <th>Minutes</th> <th>Minutes</th> <th>Minutes</th> <th>Minutes</th> </tr> </thead> <tbody> <tr> <td>Machine Time per unit</td> <td>5</td> <td>2</td> <td>3</td> <td>6</td> </tr> <tr> <td>Labour time per unit</td> <td>2</td> <td>1</td> <td>2</td> <td>5</td> </tr> <tr> <th></th> <th>Units</th> <th>Units</th> <th>Units</th> <th>Units</th> </tr> <tr> <td>Demand</td> <td>2000</td> <td>2000</td> <td>2500</td> <td>1500</td> </tr> </tbody> </table> <p>Machine time is a bottleneck resource, and the maximum capacity is 400 machine hours each week. Operating costs, including direct labour costs, are \$5,440 each week. Direct labour costs are \$12 per hour, and direct labour workers are paid for a 38-hour week, with no overtime.</p> <p>Required:</p> <p>a) Determine the quantities of each product that should be manufactured and sold each week to maximise profit and calculate the weekly profit. (8 marks)</p> <p>b) Calculate the throughput accounting ratio at this profit-maximising level of output and sales. (7 marks)</p>		Product A	Product B	Product C	Product D		\$	\$	\$	\$	Sales Price	1.40	0.80	1.20	2.80	Material Cost	0.60	0.30	0.60	1	Direct labour Cost	0.40	0.20	0.40	1		Minutes	Minutes	Minutes	Minutes	Machine Time per unit	5	2	3	6	Labour time per unit	2	1	2	5		Units	Units	Units	Units	Demand	2000	2000	2500	1500	4	5
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17	<p>Cabal makes and sells two products, Plus and Doubleplus. The direct costs of production are \$12 for one unit of Plus and \$24 per unit of Doubleplus. Information relating to annual production and sales is as follows:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;">Plus</th> <th style="text-align: center;">Double Plus</th> </tr> </thead> <tbody> <tr> <td>Annual production and Sales</td> <td style="text-align: center;">24000 units</td> <td style="text-align: center;">24000 units</td> </tr> <tr> <td>Direct labor Hour per unit</td> <td style="text-align: center;">1</td> <td style="text-align: center;">1.5</td> </tr> <tr> <td>Number of orders</td> <td style="text-align: center;">10</td> <td style="text-align: center;">140</td> </tr> <tr> <td>No of batches</td> <td style="text-align: center;">12</td> <td style="text-align: center;">240</td> </tr> <tr> <td>Number of setups per batch</td> <td style="text-align: center;">1</td> <td style="text-align: center;">3</td> </tr> <tr> <td>Special parts per unit</td> <td style="text-align: center;">1</td> <td style="text-align: center;">4</td> </tr> </tbody> </table> <p>Information relating to annual production and sales is as follows:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;">Cost Driver</th> <th style="text-align: center;">Annual Cost</th> </tr> </thead> <tbody> <tr> <td>Setup cost</td> <td style="text-align: center;">No of Setups</td> <td style="text-align: center;">73200</td> </tr> <tr> <td>Special parts handling</td> <td style="text-align: center;">Number of special parts</td> <td style="text-align: center;">60000</td> </tr> <tr> <td>Other material handling</td> <td style="text-align: center;">Number of batches</td> <td style="text-align: center;">63000</td> </tr> <tr> <td>Order handling</td> <td style="text-align: center;">Number of orders</td> <td style="text-align: center;">19800</td> </tr> <tr> <td>Other Overheads</td> <td></td> <td style="text-align: center;">216000</td> </tr> <tr> <td>Total</td> <td></td> <td style="text-align: center;">432000</td> </tr> </tbody> </table> <p>Other overhead costs do not have an identifiable cost driver, and in an ABC system, these overheads would be recovered on a direct labour hours basis.</p> <p>Required:</p> <p>(i) Calculate the production cost per unit of Plus and of Doubleplus if the company uses traditional absorption costing and the overheads are recovered on a direct labour hours basis. (6 marks)</p> <p>(ii) Calculate the production cost per unit of Plus and of Doubleplus if the company uses ABC. (6 marks)</p> <p>(iii) Comment on the reasons for the differences in the production cost per unit between the two methods. (3 marks)</p>		Plus	Double Plus	Annual production and Sales	24000 units	24000 units	Direct labor Hour per unit	1	1.5	Number of orders	10	140	No of batches	12	240	Number of setups per batch	1	3	Special parts per unit	1	4		Cost Driver	Annual Cost	Setup cost	No of Setups	73200	Special parts handling	Number of special parts	60000	Other material handling	Number of batches	63000	Order handling	Number of orders	19800	Other Overheads		216000	Total		432000	4	5
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Q. No.	SECTION E Compulsory Case Study: (1 x 15 = 15)	CO	KL
18	<p>The following data pertains to Process 2 at XYZ Manufacturing Company:</p> <ul style="list-style-type: none"> • Materials input: 1,500 units costing \$15,000. • Labour costs: \$12,000 • Overheads: \$9,000 • Normal loss: 5% of input, sold as scrap for \$10 per unit. <p>a) Calculate the average cost per unit in Process 2 assuming the Actual output: 1,410 units. and prepare the process account, abnormal gains and losses account, and scrap account. Assume that there are no additional costs incurred beyond those mentioned above. (7 marks)</p> <p>b) Calculate the average cost per unit in Process 2 assuming the Actual output: 1,440 units and prepare the process account, abnormal gains and losses account, and scrap account. (8 marks)</p> <p>Assume that there are no additional costs incurred beyond those mentioned above.</p>	5	6
