CA FINAL

Test Code – JKN_SCM_22
(Date :17/09/2020)

(Marks - 100)

Question No.1 is compulsory.

Candidates are also required to answer any

four questions from the remaining five questions.

Working notes should form part of the respective answers.

QUESTION NO.1

Audio Tech is a company that designs, develops and sells audio equipments. Audio Tech is best known for its home audio systems and speakers, noise cancelling headphones, professional audio systems and automobile audio systems.

Audio Tech sells audio equipments to consumers through its large network of retail outlets in its home country and via the company's website.

Audio Tech purchases the materials and components that it needs to manufacture audio equipments from a number of different suppliers. All of the purchases are delivered to a company's godown at its factory and are held there until they are needed for production and assembling.

Finished products are transported from the factory to Audio Tech's retail outlets by company's own trucks. The trucks follow the same schedule each week irrespective of the load they are carrying. Audio equipments that are required for sale via the company's website are transported to Audio Tech's distribution centre.

The company believes that it can attract more customers by offering quality products at reasonable prices. Each unit is tested for quality with a real time analyzer ipad app and a calibrated microphone to measure how consistently each sound system reproduced various frequencies. A bass-test sweep tone allows checking how well the subwoofer managed low-end frequencies.

Finally, they drive each in cars briefly to see how sound quality changes while on the move.

The company aims to build customer loyalty also through high level of customer services and value chain analysis. The customers can return the product if quality specifications are not met. There is a separate department to handle such complaints.

Audio Tech had implemented Balanced Scorecard as a performance measurement and management system. Company has been doing great on financial parameters and customer satisfaction parameters. Market capitalization of the company has been increased considerably over the years.

Of late, the company has witnessed high employee turnover ratio. Though the company has a formal exit interview process for the resigning employees, the input received from these interviews is rarely considered in improving HR practices. One of the common feedbacks from employees was that working hours are too long and they have to frequently work on weekends also and there is so much pressure to improve customer service without adequate support of system and processes. Also the truck drivers have been on strike thrice in the last one year demanding better pay, retirement benefits and good working conditions.

Audio Tech is keen to address the above issues and recently held a meeting to discuss the performance of the company. The Management Accountant suggested to the Managing Director to use an alternative performance measurement mechanism which considers all the stakeholders instead of just shareholders and customers. The Managing Director is skeptical of the Management Accountant's suggestions and is unclear as to whether they are suitable for the company or not.

Therefore, the company seeks your assistance.

Required

(i) IDENTIFY and EXPLAIN the various primary activities of Audio Tech in its value chain. Also SUGGEST, if there is any scope for cost reduction in these activities. **(10 marks)**

(ii) RECOMMEND an alternative performance measurement mechanism which considers all stakeholders instead of just shareholders and customers. Also INDICATE the performance measures as applicable to the situations of Audio Tech in the alternative mechanism suggested by you. **(10 marks)**

QUESTION NO.2

A. A manufacturer has two divisions, Division A and Division B. Division B produces components that are used by both Division A as well as external customers. Division A gets its entire requirement for the component from Division B.

The annual production capacity of Division B is 100,000 units. The division operates at full capacity, with no inventory at the beginning and end of the year. It sells its components to external customers at Rs.4,000 per unit. Variable cost of production for the component is Rs.2,750. Internally, it transfers it components to Division A factoring any opportunity cost in the form of lost sales. Total sales of Division B were Rs.36 crores, of which sales to external customers was Rs.20 crores.

As per company policy, demand from Division A has priority over external customers. This year, there was an additional demand from external customers for 18,000 components. However, since Division B operated at full capacity, this demand was not catered to.

Required

(i) ANALYZE the Sales in terms of Rs. and units made by Division B to both external and internal customers.
(ii) RECOMMEND the transfer pricing range that would promote goal congruence between Divisions A and B.
(iii) DISCUSS the effect of changes in external demand on the transfer price for the company, assuming the current policy continues.

(12 marks)

B. **H Automobile Group** is among top 20 business houses in India. It has been founded in the year 1930, at the height of India's movement for independence from the British, the group has an illustrious history. H's footprint stretches over a wide range of industries, spanning automobiles (two wheelers manufacturer and three wheelers manufacturer). H's headquarter is located at Hyderabad. Bike Production is one of segment of H Group. Management of H wants to analyse the following actual information for the April:

Cost Data

Customer Complaints Centre Cost	35 per hr.
Equipment Testing Cost	18 per hr.
Warranty Repair Cost	1,560 per bike
Manufacturing Rework Cost	228 per bike

Volume and Activity Data

Bikes Requiring Manufacturing Rework	3,200 bikes
Bikes Requiring Warranty Repair	2,600 bikes
Production Line Equipment Testing Time	1,600 hrs.
Customer Complaints Centre Time	2,000 hrs.

Additional Information

Due to the quality issues in the month, the bike production line experienced unproductive 'down time' which cost Rs. 7,70,000. H carried out a quality review of its existing suppliers to enhance quality levels during the month at a cost of Rs.1,25,000.

Required

a. PREPARE a statement showing 'Total Quality Costs'.

b. ADVISE any TWO measures to reduce the non- conformance cost.

(8 marks)

QUESTION NO.3

Amber Ltd. is a leading company in the Footwear Industry. The company has four factories in different locations with state of the art equipments. Due to competition in the market, company is continually reviewing its product range and enhancing its existing products by developing new models to satisfy the demands of its customers.

The company currently has a production facility which has a capacity of 3,500 standard hours per week.

Product 'Comfort' was introduced to the market six months ago and is now about to enter the maturity stage of its life cycle.

However, research by the marketing department indicates that demand of the product 'Comfort' in the market is price sensitive. The likely market responses are as follows:

Selling price per unit (Rs.)	1,750	1,60	1,525	1,450	1,30
Sales demand per week (units)	550	725	1,000	1,150	1,20

The variable cost per unit of manufacturing 'Comfort' is Rs. 750.

Standard hours used to manufacture one unit is 2 hours.

Product 'Sports' was introduced to the market two months ago using a penetration pricing policy and is now about to enter its growth stage. Each unit has a variable cost of Rs. 545 and takes 2.50 standard hours to produce. Market research has indicated that there is a linear relationship between its selling price and the number of units demanded, of the form P = a - bx. At a selling price of Rs. 1,000 per unit demand is expected to be 1,000 units per week. For every Rs. 100 increase in selling price the weekly demand will reduce by 200 units and for every Rs. 100 decrease in selling price the weekly demand will increase by 200 units.

Product 'Ethnic' is currently being developed and which is about to be launched in the market. This is a highly innovative designer product which the company believes that it will have a revolutionary impact on the market and consumer behaviour. The company has decided to use a market skimming approach to pricing this product during its introduction stage.

Required

(a) (i) ADVISE which of the above five selling prices should be charged for product 'Comfort', in order to maximize its contribution during its maturity stage. **(3 marks)**

(ii) CALCULATE the number of units to be produced of product 'Sports' in order to utilize all of the spare capacity from your answer to (i) above and the selling price per unit of product 'Sports' during its growth stage. **(2 + 3 = 5 marks)**

(b) COMPARE penetration and skimming pricing strategies during the introduction stage, using product 'Ethnic' to illustrate your answer. **(4 marks)**

(c) EXPLAIN with reasons, for each of the stages of 'Ethnic's product life cycle, the changes that would be expected in the

(i) average unit production cost

(ii) unit selling price **(4 + 4 = 8 marks)**

QUESTION NO.4

A. GRV is a chemical processing company that produces sprays used by farmers to protect their crops. One of these sprays 'Agrofresh' is made by using either chemical A or chemical

To produce one litre of Agrofresh spray they have the option to use either 12 litres of chemical A or 12 litres of chemical B. During the financial year, the purchase department of GRV has planned to use chemical B as it appeared that it would be the cheaper of the two and their plans were based on a cost of chemical B of Rs. 15 per litre.

Due to subsequent market movement during the year the actual prices changed and if the concerned department had purchased efficiently, the cost would have been

Chemical A	Rs. 15.40 per litre
Chemical B	Rs. 16.00 per litre

Production of Agrofresh spray was 1,000 litres and the usage of chemical B was 12,800 litres at a cost of Rs. 2,09,920.

You are the CEO of GRV and the Management Accountant has sent to you the following suggestions through e-mail:

"I feel that in our particular circumstances the traditional approach to variance analysis is of little use as for some of our products we can utilize one of several equally suitable chemicals and we always plan to use such chemical which will lead to cheapest production costs. However due to sharp market movements, we are frequently trapped by the sharp price changes which lead to the choice of expensive alternative at the end."

To check the reality in the content of the mail, your CEO asked you, the Cost Accountant of the company:

(i) to CALCULATE the material variances for Agrofresh by using

- Traditional Variance Analysis
- Planning and Operational Variances **(6 marks)**

(ii) to ANALYSE how planning and operational variances approached the variances.

(2 marks)

(iii) to ANALYSE how the advanced variances are useful to your organisation. **(2 marks)**

B. **Mould & Dies (M&D)** was established in 1980 and has enormous wealth of experience in the mould manufacturing industry and serves wide range of plastic moulds all over nation. Over the past decade, M&D has developed the reputation for quality products & services for customer focused approach. It deals in injection moulds, blow moulds, die sets, moulds base etc.

With a state-of-the-art infrastructure facility, M&D is able to meet the qualitative and quantitative demands of its clients. Its vision & mission is to provide high class manufactured products by using best quality raw materials.

M&D has developed a new product "M" which is about to be launched into the market and anticipates to sell 80,000 of these units at a sales price of Rs.300 over the product's life cycle of four years. Data pertaining to product "M" are as follows:

Costs of Design and Development of Molds, Dies, and Other Tools	Rs.8,25,000
Manufacturing Costs	Rs.125 per unit
Selling Costs	Rs.12,500 per year + Rs.100 per unit
Administration Costs	Rs.50,000 per year
Warranty Expenses	5 Replacement Parts per 25 units at Rs.10 per part; 1 Visit per 500 units (Cost Rs.500 per visit)

Required

a. COMPUTE the product "M"'s 'Life Cycle Cost'.

b. SUGGEST two ways to maximize "M''s lifecycle return.

Note: Ignore time value of money

(10 marks)

QUESTION NO.5

A. The information given below pertains to ABC Enterprises, a specialized car garage door installation company. ABC Enterprises use to get multiple service calls from the customers with variety of requirements. They may have to Install, Replace, Adjust or Lubricate some part or other to make the door functional. They work with 5 parts as given in the table, namely Door, Motor, Track, Trimmer and T -Lock.

	Parts	Type of Service				Total
		Install	Replace	Adjust	Lube	
1	Door	2	5	1	0	**8**
2	Motor	3	2	16	9	**30**
3	Track	5	0	6	6	**17**
4	Trimmer	14	6	0	0	**20**
5	T-Lock	5	0	1	0	**6**
6	Miscellaneous	0	2	1	1	**4**
	Total	**29**	**15**	**25**	**16**	**85**

Required

(i) Using the above data, carry out a Pareto Analysis (80/20 rule) of Total Parts.

(3 Marks)

(ii) Using the same data carry out the second level Pareto Analysis on the type of services with respect to Motors only. **(2 Marks)**

(iii) Give your RECOMMENDATIONS on the basis of your calculations in (i) and (ii) above. **(5 Marks)**

(Do calculations to two decimals only)

OR

STATE the business situations in which you recommend to apply Pareto Analysis.

(5 Marks)

B. **B. Steels** is a leading manufacturer of flat and long products and have state-of the-art plants. These plants manufacture value added products covering entire steel value chain right from coal mining to manufacturing Pig Iron, Billets, HR Coils, Black Pipe/GI Pipe, Cable Tapes etc. conforming to international standards. The rock-solid foundation combined with nonstop upgradation and innovation has enabled the B. Steels to surpass its goals constantly. Its vision and values for sustainable growth is balancing economic prosperity and social equality while caring for the planet. It is preparing its balanced scorecard for the year 2018-19. It has identified the following specific objectives for the four perspectives.

▪ Improve post-sales service	▪ Improve employee morale	▪ Improve employee job satisfaction
▪ Increase gross margin	▪ Increase number of customers	▪ Increase profitability of core product line
▪ Increase plant safety	▪ Increase customer retention	

B. Steels has collected Key Performance Indicators (KPIs) to measure progress towards achieving its specific objectives. The KPIs and corresponding data collected for the year 2018-19 are as follows:

Key Performance Indicator	Goal	Actual
Average replacement time (number of days)	2	1.5
Gross margin growth percentage	15%	16%
Number of customers	15,000	15,600
Number of plant accidents	0	2

Percentage of repeat customers	83%	81%
Core product line profit as a percentage of core-product line sales	5%	4.4%
Employee turnover rate (number of employees leaving/ Average number of total employees)	2%	3%
Employees satisfaction rating (1-5, with 1 being the most satisfied)	1	1.2

For preparation of Balanced Scorecard report, the following format has been developed:

B. Steels

Balanced Scorecard Report

For the year ended March 31, 2019

Perspective	Objective	KPI	Goal	Actual	Goal Achieved (Yes or No)
Financial	×	×	×	×	×
Customer	×	×	×	×	×
Internal Business Process	×	×	×	×	×
Learning and Growth	×	×	×	×	×

Required

(i) PREPARE a balanced scorecard report using the above-mentioned format. Place objective under the appropriate perspective heading in the report. Select a KPI from the list of KPIs that would be appropriate to measure progress towards each objective.

(ii) B. Steels desires to integrate sustainability and corporate social responsibility related KPIs in their balance scorecard to adhere vision and values. ADVISE B. Steels, using TBL framework.

(10 marks)

QUESTION NO.6

Excel Ltd. is the leading manufacturer and exporter of high quality leather products - Product A and Product B.

Selling price per unit of Product A and Product B is Rs. 620 and Rs. 420 respectively.

Both the products pass through three processes - Tanning, Dyeing and Finishing during manufacturing process. Allocation of costs per unit of leather products manufactured among the processes are given below:

Particulars	Tanning	Dyeing	Finishing	Total
Direct Materials per unit	140	180	140	460
Direct Labour per unit	90	120	90	300
Cost allocation to Product A	70%	50%	70%	
Cost allocation to Product B	30%	50%	30%	

General overheads per unit of leather products manufactured are Rs. 230 which is allocated equally between Product A and Product B. Above cost allocation is the basis for the decisions regarding pricing of the products.

In this Industry, all the major production processes have environmental impact at all stages of the process, including generation of waste, emission of harmful gases, noise pollution, water contamination etc.

The management of the company is worried about the above environmental impact and has taken initiative to preserve the environment like - research and development activities aimed at reducing pollution level, planting trees, treatment of harmful gases and airborne emissions, wastewater treatment etc.

The management of the company desires to adopt Environmental Management Accounting as a part of strategic decision making process. Pricing of products should also factor in environmental cost generated by each product.

General overheads per unit of leather products manufactured are Rs. 230 which includes :

Treatment cost of harmful gases…Rs. 80

Wastewater treatment cost Rs. 100

Cost of planting of trees… Rs. 20

Process wise information related to generation of wastewater and harmful gases is given as below:

	Tanning	Dyeing	Finishing	Total
Wastewater generated (litres per week)	900	600	0	1,500
Emission of harmful gases (cc per week)	400	300	100	800
Cost allocation to Product A	70%	50%	70%	
Cost allocation to Product B	30%	50%	30%	

The remaining overheads cost and cost of planting trees can be allocated equally between Product A and Product B.

Required

(a) CALCULATE the product wise profitability based on the original cost allocation. **(2 marks)**

(b) RECALCULATE the product wise profitability based on activity based costing (Environment driven costs). **(5 marks)**

(c) ANALYZE the difference in product profitability as per both the methods. **(2 marks)**

(d) RECOMMEND and EXPLAIN the four management accounting techniques for the identification and allocation of environmental costs. **(8 marks)**

(e) STATE why the management of environmental costs is becoming increasingly important in organizations. Give reasons. **(3 marks)**