CA FINAL – Nov’19

SUBJECT- SCMPE

Test Code – FNJ 7121

(Date :)

(Marks - 100)

Question 1 is compulsory and attempt any 4 questions out of remaining 5

Question 1:

The town of Silver sands is located along the coast of the Caribbean Sea. Known for its beautiful coastline and pleasant weather, the town attracts a lot of tourists from all around the world. The town has two beaches that are maintained by the local government and can be used by the general public. In order to preserve the natural ecosystem, other beaches on the coastline are not accessible to the general public. Tourism is the main source of livelihood for its residents. Consequently, cleanliness of beaches is of paramount importance in order to sustain and develop this industry.

The local government has recently employed a contractor to clean up the beaches using beach cleaning machines. The contractor has been selected through a competitive tendering / bidding process. The contractor uses sand cleaning machines that are pulled by tractors. Sand is scooped onto a conveyor or screening belt. It is either raked through (combed using prongs) or sifted through (filtered), in order to separate the waste from the sand. The cleaned sand is left behind on the breach while the waste is removed. Majority of the litter comprises of plastic waste (bags, bottles etc.) while some portion also includes sea weed, glass, aluminum cans, paper, timber, and cardboard. A detailed log is kept by the contractor about the stretch of beach that has been cleaned, time taken for the clean – up, number of tractors used etc. This log is also checked and signed by a local government official. This record is used to process payments at the end of the month.

In addition to contracting with the vendor to clean machines, the local government has also placed bins at various locations on the beach for the public to dispose their waste. The town’s municipality workers clean these bins every morning. Again, detailed logs of the man power and other resources employed is kept by the responsible department. In addition, the government has opened a mobile messaging system, whereby the public can message the government department if they find litter anywhere in the beach. Depending on whether it is from overflowing bins or buried debris in the sand, the municipality workers or the contractor will take action to clear it within 24 hours. A detailed log of these operations is also maintained. Patrons can also suggest measures for improving cleanliness on the beaches.
Due to its importance to the economy, the local government has allotted substantial budget for these operations. At the same time, it is essential to know if this is sufficient for the purpose of keeping the beaches clean. Therefore, the government wants to assess whether the town is getting “good value for money” from this expenditure. The “value for money” concept can be looked at from three perspectives : (i) economy, (ii) efficiency and (iii) effectiveness. The Internal Audit

(IA) department that has been requested to undertake this study, has requested for guidelines on whether the audit should focus on economy and efficiency of the beach cleaning operations or on effectiveness of the same. Economy and efficiency audit assess whether the same level of service can be procured at lower cost or resources while effectiveness audit assess whether better service can be procured at same cost.

Depending on the outcome of the audits, if required, policy decisions like requesting for additional funding from the state government, alternate policy measures like levying penalty for littering etc. can be taken.

Required

Prepare a letter addressed to the IA department.

(i) RECOMMEND guidelines to assess economy and efficiency of beach cleaning operations.

(ii) RECOMMEND guidelines to assess effectiveness of beach cleaning operations.

(iii) IDENTIFY challenges involved in assessment of effectiveness?

(iv) RECOMMEND general guidelines, how the audit team may conclude the audit based on the combined outcomes of economy, efficiency, and effectiveness. **(20 marks)**

Question 2:

A fertilizer company produces Grade A and Grade B fertilizers. One kilogram of Grade A fertilizer sells for Rs. 280 per kilogram and one kilogram of Grade B fertilizer sells for Rs. 400 per kilogram.

The products pass through three cost centers CC1, CC2 and CC3 during the manufacturing process. Total direct material cost per kilogram of fertilizer produced is Rs. 300 and direct labor cost per kilogram of fertilizer produced is Rs. 200. Allocation between the cost centres is given below :

Particulars	CC1	CC2	CC3	Total
Cost of Direct Material (per kg of fertilizer produced)	Rs. 90	Rs. 120	Rs. 90	Rs. 300
Cost of Direct Labour (per kg of fertilizer produced)	Rs. 60	Rs. 80	Rs. 60	Rs. 200
Cost Allocation to Grade A	30%	50%	30%	-
Cost Allocation to Grade B	70%	50%	70%	-

All of expenses (considered to be overheads) per kilogram of fertilizer produced is Rs. 150.

This is allocated equally between Grade A and Grade B fertilizer. Pricing decisions for the fertilizers is made based on the above cost allocation.

The management accountant of the company has recently come across the concept of environmental management accounting. Pricing of products should also factor in the environmental cost generated by each product. An analysis of the overhead expenses revealed that the total cost of Rs. 150 per kilogram of fertilizer produced, includes incinerator costs of Rs. 90 per kilogram of fertilizer produced. The incinerator is used to dispose the solid waste produced during the manufacturing process. Below is the cost center and product wise information of solid waste produced :

Waste produced (in tonnes per annum)	**CC1**	**CC2**	**CC3**	**Total**
Grade A	2	3	1	6
Grade B	2	2	5	9

Based in the impact that each product has on the environment, the management would like to revise the cost allocation to products based taking into account the incinerator cost that each product generates. The remaining overhead expenses of Rs. 60 per kilogram of fertilizer produced can be allocated equally.

Required :

(i) CALCULATE product wise profitability based on the original cost allocation. RECALCULATE the product wise profitability based on activity based costing methodology (environmental management accounting).

(ii) ANALYZE difference in product profitability as per both the methods.

(iii) RECOMMEND key takeaways for the company to undertake the above analysis of overhead costs and pricing as per environmental management accounting. **(20 marks)**

Question 3:

(A)

Generation 2050 Technologies Ltd. develops cutting – edge innovations that are powering the next revolution in mobility and has nine tablet smart phone models currently in the market whose previous year financial data is given below :

Model	Sales (Rs. '000)	Profit – Volume (PV) Ratio
Tab – A001	5,100	3.53%
Tab – B002	3,000	23.00%
Tab – C003	2,100	14.29%
Tab – D004	1,800	14.17%
Tab – E005	1,050	41.43%
Tab – F006	750	26.00%
Tab – G007	450	26.67%
Tab – H008	225	6.67%
Tab – I009	75	60.00%

Using the financial data, carry out a Pareto analysis (80/20 rule) of Sales and Contribution. Discuss your findings with appropriate recommendations.

(10 marks)

(B)

Golden Pacific Airlines Ltd. operates its services under the brand 'Golden Pacific'. The 'Golden Pacific' route network spans prominent business metropolis as well as key leisure destinations across the Indian subcontinent. 'Golden Pacific', a low-fare carrier launched with the objective of commoditizing air travel, offers airline seats at marginal premium to train fares across India.

Profits of the 'Golden Pacific' have been decreasing for several years. In an effort to improve the company's performance, consideration is being given to dropping several flights that appear to be unprofitable.

Income statement for one such flight from 'New Delhi' to 'Leh' (GP - 022) is given below (per flight):

	Rs.	Rs.
Ticket Revenue (175 seats x 60% Occupancy x Rs. 7,000 ticket price)		7,35,000
Less: Variable Expenses (Rs.1,400 per person)		1,47,000
Contribution Margin		5,88,000
Less: Flight Expenses:		
Salaries, Flight Crew	1,70,000	
Salaries, Flight Assistants	31,500	

Baggage Loading and Flight Preparation	63,000	
Overnight Costs for Flight Crew and Assistants at destination	12,600	
Fuel for Aircraft	2,38,000	
Depreciation on Aircraft	49,000*	
Liability Insurance	1,47,000	
Flight Promotion	28,000	
Hanger Parking Fee for Aircraft at destination	7,000	7,46,100
Net Gain / (Loss)		(1,58,100)

* Based on obsolescence

The following additional information is available about flight GP-022.

1. Members of the flight crew are paid fixed annual salaries, whereas the flight assistants are paid by the flight.
2. The baggage loading and flight preparation expense is an allocation of ground crew's salaries and depreciation of ground equipment.
3. One third of the liability insurance is a special charge assessed against flight GP-022 because in the opinion of insurance company, the destination of the flight is in a "high-risk" area.
4. The hanger parking fee is a standard fee charged for aircraft at all airports.
5. If flight GP-022 is dropped, 'Golden Pacific' Airlines has no authorization at present to replace it with another flight.

Required:
Using the data available, prepare an ANALYSIS showing what impact dropping flight GP-022 would have on the airline's profit. **(10 marks)**

Question 4:

(A)

Great Vision manufactures a wide range of optical products including lenses and surveillance cameras. Division 'A' manufactures the lenses while Division 'B' manufactures surveillance cameras. The lenses that Division 'A' manufactures is of standard quality that has a number of applications. Due to huge demand in the market for its products Division 'A' is operating at full capacity. It sells its lenses in the open market for Rs. 140 per lens, the variable cost of production for each lens is Rs. 110, while the total cost of production is Rs. 125 per lens.

The total production cost of a camera by Division 'B' is Rs. 400 each. Currently Division 'B' procures lens from foreign vendors, the cost per lens would be Rs. 170 each. The management of Great vision has proposed that to take advantage of in-house production capabilities and consequently the procurement cost of the lens would reduce. It is proposed that Division 'B' should buy an average of 5,000 lenses each month from Division 'A' at Rs. 120 per lens. The estimate cost of a surveillance camera is as below:

Other components purchased from external vendors	Rs. 150
Cost of lens purchased from Division 'A'	Rs. 120
Other variable costs	Rs. 30
Fixed overheads	Rs. 50
Total cost of a camera	Rs. 350

Each surveillance camera is sold for Rs. 410. The margin for each camera is low since competition in the market is high. Any increase in the price of a camera would reduce the market share. Therefore, Division 'B' cannot pay Division 'A' beyond Rs. 120 per lens procured.

Great vision's management uses Return on investments (ROI) as a scale to measure the divisional performance and marginal costing approach for decision making.

Required:

Do you feel that the divisional managers should accept the inter-divisional transfers in principle? If yes, CALCULATE the range of transfer price? **(8 marks)**

(B)

JK Limited manufactures three Product D, E and F each requiring similar material, labour and production facilities. Trading results of the company for the year ending March, 2018 are as under :

(Amount in (Rs.))

	D	E	F	Total
Sales	38,50,000	13,90,000	30,20,000	82,60,000
Variable Cost :				
Material	10,78,000	6,25,500	9,06,000	26,09,500
Labour	9,24,000	4,86,500	6,04,000	20,14,500
Overhead	7,39,200	2,91,900	4,83,200	15,14,300
Total variable cost	27,41,200	14,03,900	19,93,200	61,38,300
Contribution	11,08,800	(13,900)	10,26,800	21,21,700
Fixed overheads				12,60,000
Profit				8,61,700

Product E, despite best efforts, does not show any good prospect to yield reasonable margins and it is not possible to raise its price so as to make it profitable. The company has decided to discontinue its production w.e.f. 1st April 2018. Products D and F have good potential to grow and the market can easily absorb the increased production. The company has decided to raise the production of Products D and F by diverting the 60% labour of Product E to Product D and balance 40% to Product F.

Following additional information is available for the year beginning April 2018 :

(A) Total Direct wage bill for the year would be at the same level as for the year ending 31.3.2018. Material cost per unit will increase by 5%, however variable overheads per unit will remain same. Fixed overheads would increase by Rs. 96,500.

(B) Selling price per unit of Product D will increase by 4% and Product F by 5%.

Required:

(i) Prepare budget for the next year beginning April 2018 in the format as detailed above.

(ii) Compare and analyse the budget for the year 2018 and 2019 highlighting main features. Show calculation of amount to the nearest Rupee.

(iii) To advise the management on comparative contribution/ profitability if 60% labour of Product E is transferred to Product F instead of Product D as above and balance 40% to Product D instead of Product F. Show calculations up to three decimal points. Give detailed reasoning for your advice. **(12 marks)**

Question 5:

(A)

Recently, Ministry of Health and Family Welfare along with Drug Control Department have come hard on health care centres for charging exorbitant fees from their patients. Indraprastha Health Care Ltd. (IHCL), a leading integrated healthcare delivery provider company is feeling pinch of measures taken by authorities and facing margin pressures due to this. IHCL is operating in a competitive environment so; it's difficult to increase patient numbers also. Management Consultant of the company has come out with some plan for cost control and reduction.

IHCL provides treatment under package system where fees is charged irrespective of days a patient stays in the hospital. Consultant has estimated 2.50 patient days per patient. He wants to reduce it to 2 days. By doing this, consultant has targeted the general variable cost of Rs. 500 per patient day. Annually 15,000 patients visit to the hospital for treatment.

Medical Superintendent has some concerns with that of Consultant's plan. According to him, reducing the patient stay would be detrimental to the full recovery of patient. They would come again for admission thereby increasing current readmission rate from 3% to 5%; it means readmitting 300 additional patients per year. Company has to spend Rs. 25,00,000 more to accommodate this increase in readmission. But Consultant has found bless in disguise in this. He said every readmission is treated as new admission so it would result in additional cash flow of Rs. 4,500 per patient in the form of admission fees.

Required

Calculate the impact of Management Consultant's plan on profit of the company. Also comment on result and other factors that should be kept in mind before taking any decision. **(8 marks)**

(B)

BYD Alloy Ltd. first opened its door in 1990 for business and now it is a major supplier of metals supporting over a dozen different industries and employs experts to support each industry. These include Wood & Panel Products Manufacturing, Hearth Products, Site Furnishings, Commercial and Residential Construction etc. It has grown through devotion to its customers, dedication to customer service and commitment to quality products. The company has two divisions : Division 'Y' and Division 'D'. Each division work as an investment centre separately. Salary of each divisional manager is Rs. 7,20,000 per annum with the addition of an annual performance related bonus based on divisional return on investment (ROI). A minimum ROI of 12% p.a. is expected to be achieved by each divisional manager. If a manager only achieves the 12% target, he will not be rewarded a bonus. However, for every whole 1% point above 12% which the division achieves for the year, a bonus equal to 3% of annual salary will be paid subject to a maximum bonus of 20% of annual salary. The figures belonging to the year ended 31st March 2018 are given below :

	Division 'Y' ('000)	Division 'D' ('000)
Revenue	29,000	17,400
Profit	5,290	3,940
Less : Head Office Cost	(2,530)	(1,368)

Net Profit	2,760	2,572
Non – Current Assets	19,520	29,960
Cash, Inventory, and Trade Receivable	4,960	6,520
Trade Payable	5,920	2,800
Manager Responsible	HAI	FAI

During the financial year 2017 – 18, FAI manager of Division 'D' invested Rs. 13.6 million in new equipment including an advanced cutting machine, which will increase productivity by 10% per annum. HAI, manager of Division 'Y', has made no investment during the year, even its computer system needs updation. Division 'Y''s manager has already delayed payments of its suppliers due to limited cash & bank balance although the cash balance at Division 'Y' is still better than that of Division 'D'.

Required :

(i) For each division, COMPUTE, ROI for the year ending 31st March 2018. Justify the figures used in your calculation.

(ii) COMPUTE bonus of each manager for the year ended 31st March 2018.

(iii) DISCUSS whether ROI provides justifiable basis for computing the bonuses of managers and the problems arising from its use at BYD for the year ended 31 March 2018.

(12 marks)

Question 6:

(A)

Aayla runs the Planetarium Station in New Delhi, India. The strength of the station lies in its live interactions and programs for visitors, students and amateur astronomers. The station is always active with programs for school and college students and for amateur astronomers. One of the station's key attractions is a big screen IMAX theatre. IMAX is a 70 mm motion picture film format which shows images of far greater size and resolution than traditional film systems. The IMAX cinema projection standards were developed in Canada in the late 1960s. Unlike traditional projectors, the film is run horizontally so that the image width is greater than the width of the film.

The average IMAX show at the station attracts 120 visitors (50 children and 70 adults) at a ticket price of Rs.160 for children and Rs.200 for adults. Aayla estimates that the running costs per IMAX show are Rs.10,000. In addition, fixed costs of Rs.7,500 are allocated to each show based on annual estimate of the number of IMAX shows.

The Hobart School has approached Aayla about scheduling an extra show for its class VIII students. One hundred students and five teachers are expected to join the special show on the 'Planets & Solar System', a feature that is currently showing. The school has asked Aayla for a price quote. The special show will take place at 08:30 AM when the IMAX is not usually open.

Required:

RECOMMEND the minimum amount that Aayla should charge. **(10 marks)**

(B)

Managing Director of Greenergy Ltd thinks that Standard Costing has little to offer in the reporting of material variances due to frequently change in price of materials.

Greenergy can utilize one of two equally suitable raw materials and always plan to utilize the raw material which will lead to cheapest total production costs. However Greenergy is frequently trapped by price changes and the material actually used often provides, after the event, to have been more expensive than the alternative which was originally rejected.

During last accounting period, to produce a unit of ‘P’ Greenergy could use either

2.50 Kg of ‘G’

Or

2.50 kg of ‘D’.

Greenergy planned to use ‘G’ as it appeared it would be cheaper of the two and plans were based on a cost of ‘G’ of Rs.1.50 per Kg. Due to market movements the actual prices changed and if Greenergy had purchased efficiently the cost would have been:

‘G’ Rs. 2.25 per Kg;

Or

‘D’ Rs. 2.00 per Kg

Production of ‘P’ was 1,000 units and usage of ‘G’ amounted to 2,700 Kg at a total cost of Rs. 6,480/-.

Required:

CALCULATE the material variance for ‘P’ by:

(i) Traditional Variance Analysis; and

(ii) An approach which distinguishes between Planning and Operational Variances.

(10 marks)