

INTERMEDIATE EXAMINATION

**GROUP -II
(SYLLABUS 2016)**

SUGGESTED ANSWERS TO QUESTIONS

JUNE- 2018

Paper-8 : COST ACCOUNTING

Time Allowed : 3 Hours

Full Marks : 100

The figures in the margin on the right side indicate full marks.
All Sections are compulsory. Each section contains instructions regarding the number of questions to be answered within the section.
All working notes must form part of the answer.
Wherever necessary, candidates may make appropriate assumptions and clearly state them.
No present value factor table or other statistical table will be provided in addition to this question paper.

Section - A

Section A contains Question Number 1. All parts of this question are compulsory.

1. Answer the following questions:

(a) Choose the correct answer from the given alternatives (You may write only the Roman numeral and the alphabet chosen for your answer): **1×10=10**

- (i) Batch costing is suitable for
 - (a) Oil Industry
 - (b) Sugar Industry
 - (c) Chemical Industry
 - (d) Pharmaceutical Industry

- (ii) Idle time is
 - (a) Time spent by workers in office
 - (b) Time spent by workers in factory
 - (c) Time spent by workers off their work
 - (d) Time spent by workers on their job

- (iii) Warehouse expense is an example of
 - (a) Production overhead
 - (b) Administration overhead
 - (c) Selling overhead
 - (d) Distribution overhead

- (iv) Standard deals with the principles and methods of determining depreciation and amortization cost is
 - (a) CAS-8
 - (b) CAS -11
 - (c) CAS-16
 - (d) CAS-20

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- (v) In Reconciliation Statement expenses shown only in cost accounts are
- Added to financial profit
 - Deducted from financial profit
 - Ignored
 - Deducted from costing profit
- (vi) In a job cost system, costs are accumulated
- On a monthly basis
 - By specific job
 - By department or process
 - By kind of material used
- (vii) In a process 6,000 units are introduced during a period. 5% of input is normal loss. Closing work-in-process 60% complete is 800 units. 4,900 completed units are transferred to next process. Equivalent production for the period is
- 6,800 units
 - 5,700 units
 - 5,680 units
 - 5,380 units
- (viii) Which of the following best describes a fixed cost?
- It may change in total where such change is unrelated to changes in production.
 - It may change in total where such change is related to changes in production.
 - It is constant per unit of change in production.
 - It may change in total where such change depends on production within the relevant range.
- (ix) Z Ltd. is planning to sell 1,00,000 units of product A for Rs. 12.00 per unit. The fixed costs are Rs.2,80,000. In order to realize a profit of Rs. 2,00,000, what would the variable costs be?
- Rs. 4,80,000
 - Rs. 7,20,000
 - Rs. 9,00,000
 - Rs. 9,20,000
- (x) Sales budget is an example of
- Expenditure budget
 - Functional budget
 - Capital budget
 - Master budget

- (b) Match the statement in Column I with the most appropriate statement in Column II:
(You may opt to write only the Roman numeral and the matched alphabet instead of copying contents into the answer Books) 1x5=5

| | Column I | | Column II |
|-------|---------------------------------|---|-------------------------------------|
| (i) | Imputed costs | A | Cost control technique |
| (ii) | FSN analysis | B | Treated as part of factory expenses |
| (iii) | Captive power plant expenses | C | Costing profit and loss account |
| (iv) | Abnormal loss is transferred to | D | Process of classifying material |
| (v) | Variance analysis | E | Direct allocation |
| | | F | Not involving cash outlay |
| | | G | Management by exception |
| | | H | Decision package |

- (c) State whether the following statements are 'True' or 'False':(You may write only the Roman numeral and whether 'True' or 'False' without copying the statements into the

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answer books):

1x5=5

- (i) Factory overhead cost applied to a job is usually based on a pre-determined rate.
- (ii) CAS-19 deals with the principles and methods of determining the manufacturing cost of excisable goods.
- (iii) Cost ledger control account makes the cost ledger self-balancing.
- (iv) FIFO method is followed for evaluation of equivalent production when prices are fluctuating.
- (v) Standard costs and budgeted costs are inter-related and inter-dependent.

(d) Fill in the blanks: (You may write only the Roman numeral and the content filling the blanks) 1x5=5

- (i) _____ is the process of regulating the action so as to keep the element of cost within the set parameters.
- (ii) In absorption costing _____ is added to inventory.
- (iii) CAS _____ stands for cost of service cost Centre.
- (iv) At _____ contribution available is equal to total fixed cost.
- (v) The document which describes the budgeting organisation, budgeting procedure etc. is known as _____.

Answer:

1. (a) (i) (d)
(ii) (c)
(iii) (d)
(iv) (c)
(v) (b)
(vi) (b)
(vii) (d)
(viii) (a)
(ix) (b)
(x) (b)

(b)

| | Column I | | Column II |
|-------|---------------------------------|---|-------------------------------------|
| (i) | Imputed costs | F | Not involving cash outlay |
| (ii) | FSN analysis | D | Process of classifying material |
| (iii) | Captive power plant expenses | B | Treated as part of factory expenses |
| (iv) | Abnormal loss is transferred to | C | Costing profit and loss account |
| (v) | Variance analysis | G | Management by exception |

- (c) (i) True
(ii) False
(iii) True
(iv) False
(v) False

- (d) (i) Cost Control
(ii) Fixed Cost
(iii) CAS - 13
(iv) Break even point
(v) Budget Manual

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Section - B

Answer any five questions from question numbers 2 to 8.
Each question carries 15 marks.

15 × 5 = 75

2. (a) The existing Incentive system of SHRISTI LTD is as under:

Normal working week : 5 days of 8 hours each plus 3 late shifts of 3 hours each
Rate of Payment : Day work :Rs.160 per hour
Late shift:Rs. 225 per hour

Average output per operator for 49-hours week i.e. including
3 late shifts : 120 articles.

In order to increase output and eliminate overtime, it was decided to switch on to a system of payment by results. The following information is obtained:

Time-rate (as usual) :Rs. 160 per hour
Basic time allowed for 15 articles : 5 hours
Piece-work rate : Add 20% to basic piece-rate
Premium Bonus : Add 50% to time.

Required:

Prepare a Statement showing hours worked, weekly earnings, number of articles produced and labour cost per article for one operator under the following systems:

- (i) Existing time-rate
- (ii) Straight piece-work
- (iii) Rowan system
- (iv) Halsey premium system

Assume that 135 articles are produced in a 40-hour week under straight piece work, Rowan Premium System, the Halsey Premium System above and worker earns half the time saved under Halsey Premium System. 9

- (b) The following figures are taken from the accounts of BALEN LTD a manufacturing concern for the month of October, 2017:

Indirect Materials : Production Departments : X Rs. 19,000; Y Rs. 24,000; Z Rs. 4,000;
Service Departments : Maintenance Rs. 30,000; Stores Rs. 8,000.
Indirect Wages : Production Departments : X Rs. 18,000; Y Rs. 22,000; Z Rs. 6,000;
Service Departments : Maintenance Rs. 20,000; Stores Rs.13,000.

Other Expenses: Power and Light: Rs. 1,20,000; Rent and Rates Rs. 56,000; Insurance of Assets Rs. 20,000; Meal Charges Rs. 60,000; Depreciation @ 6% p.a. on capital value of assets.

Departmental Data

| Items | Production Departments | | | Service Department | |
|-------------------------------|------------------------|-----------|-----------|--------------------|----------|
| | X | Y | Z | Maintenance | Stores |
| Area (Sq. Ft.) | 4,000 | 4,000 | 3,000 | 2,000 | 1,000 |
| Capital Value of Assets (Rs.) | 20,00,000 | 24,00,000 | 16,00,000 | 12,00,000 | 8,00,000 |
| Kilowatt Hours | 2,000 | 2,200 | 800 | 750 | 250 |
| Number of Employees | 180 | 240 | 60 | 80 | 40 |

Service rendered by Maintenance Department to Production Departments:

X 50%; Y 30%; Z 20%.

Service rendered by Stores Department to Production Departments:

X 40%; Y 40%; Z 20%.

From the above data, prepare a Departmental Distribution Summary showing apportionment of costs of Service Departments to the Production Departments and the Total Overheads of the Production Departments. 6

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| | | | | | | | |
|------------------------|--|-----------------|-----------------|-----------------|---------------|-----|-----|
| Maintenance Department | | - | 45,000 | 27,000 | 18,000 | Nil | |
| Stores Department | | - | 16,000 | 16,000 | 8,000 | | Nil |
| Total Overheads | | <u>4,60,000</u> | <u>1,87,000</u> | <u>1,91,000</u> | <u>82,000</u> | | |

3. (a) What are the Direct Expenses as defined in CAS-10 (Limited Revision 2017)? Also discuss the general principles of its measurement as per CAS-10. (any five only) 6

(b) The net profit of X Ltd., appeared at Rs. 41,800 as per financial records for the year ending 31st March, 2018. A scrutiny of the figures from both the sets of accounts revealed the following facts:

| | Rs. |
|--|--------|
| Works overhead under-recovered in costs | 1,500 |
| Administrative overheads over-recovered in costs | 850 |
| Depreciation charged in financial accounts | 5,600 |
| Depreciation recovered in costs | 6,250 |
| Interest on investments not included in costs | 3,000 |
| Loss due to obsolescence charged in financial accounts | 2,850 |
| Income tax reserve made in financial accounts | 20,150 |
| Bank interest and transfer fee credited in financial books | 370 |
| Stores adjustment (credit) in financial books | 230 |
| Value of opening stock in : Cost accounts | 24,800 |
| : Financial accounts | 26,300 |
| Value of closing stock in : Cost accounts | 25,000 |
| : Financial accounts | 23,000 |
| Interest charged in cost accounts | 2,000 |
| Imputed rent charged in cost accounts | 1,000 |
| Goodwill written off | 5,000 |
| Loss on sale of furniture | 600 |
| Selling and distribution expenses not charged in cost accounts | 10,000 |
| Donations to Prime Minister's Relief Fund | 5,100 |
| Transfer to Debenture Redemption Fund | 9,000 |
| Transfer to Dividend Equalisation Fund | 20,500 |

Required:

Prepare a statement showing the reconciliation statement and find out the profit as per costAccounts. 9

Answer:

3. (a) **Direct Expenses** : As per CAS - 10 (Limited Revision 2017), Direct Expenses are the "Expenses relating to manufacture of a product or rendering a service, which can be identified or linked with the cost object other than direct material cost and direct employee cost."

General Principles of Measurement: (Any five points)

- (i) Identification of direct expense shall be based on traceability in an economically feasible manner.
- (ii) Direct expenses incurred for bought out resources shall be determined at invoice price including all taxes and duties and any other expenditure directly attributable thereto net of trade discounts, taxes and duties refundable or to be credited.
- (iii) Direct expenses paid/incurred in lump-sum or which are in the nature of one time payment shall be amortized on the basis of estimated output or benefit to be derived from such expenses.
- (iv) Finance cost incurred in connection with self generated or procured resources shall not form part of the direct expenses.

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- (v) Any subsidy/grant/incentive or any amount received or receivable with respect to any direct expenses shall be reduced for ascertainment of the cost of the cost object.
- (vi) Penalties/damages paid to statutory authorities or other third parties shall not form part of the direct expenses.
- (vii) Any change in the cost accounting principles applied for measurement of the direct expenses should be made only if it is required by law or for compliance with the requirements of a CAS or a change would result in a more appropriate preparation or presentation of cost statement of the organization.
- (viii) Credit/recoveries relating to direct expenses if material and quantifiable shall be deducted to arrive at the net direct expenses.
- (ix) Any abnormal portion of direct expenses which is material and quantifiable shall not form part of the direct expenses.

(b)

Reconciliation Statement

| Particulars | Rs. | Rs. |
|--|--------|-----------------|
| Profit as per Financial Accounts | | 41,800 |
| Add: | | |
| Works Overhead under-recovered in Cost Accounts | 1,500 | |
| Expenses and losses debited in Financial Accounts but excluded from Cost Accounts: | | |
| Income Tax Reserve | 20,150 | |
| Loss on sale of Furniture | 600 | |
| Loss due to obsolescence | 2,850 | |
| Goodwill written off | 5,000 | |
| Selling and Distribution expenses not charged in Cost Accounts | 10,000 | |
| Donation to Prime Minister's Relief Fund | 5,100 | |
| Transfer to Debenture Redemption Fund | 9,000 | |
| Transfer to Dividend Equalisation Fund | 20,500 | |
| Under valuation of Opening Stock in Cost Accounts | 1,500 | |
| Over valuation of Closing Stock in Cost Accounts | 2,000 | <u>78,200</u> |
| | | 1,20,000 |
| Less: | | |
| Administrative Overheads over-recovered in Cost Accounts | 850 | |
| Depreciation over-charged in Cost Accounts | 650 | |
| Incomes and gains credited in Financial books but not shown in Cost Accounts: | | |
| Interest on Investments | 3,000 | |
| Bank interest and transfer fees | 370 | |
| Stores adjustments | 230 | |
| Imputed rent charged in Cost Accounts | 1,000 | |
| Interest charged in Cost Accounts | 2,000 | <u>8,100</u> |
| Profit as per Cost Accounts | | <u>1,11,900</u> |

4. (a) The following data are available from the books and records of VEEMYES Ltd. for the month of November 2017.

Direct Labour cost : Rs. 20,000 (125 % of factory overheads)

Inventory accounts show the following figures:

| | November 1 Rs. | November 30 Rs. |
|-------------------------|-------------------|--------------------|
| Raw materials | 10,000 | 20,000 |
| Work in progress | 8,000 | 4,000 |
| Finished goods | 10,000 | 5,000 |
| Selling expenses | | 15,000 |
| Office expenses | | 10,000 |

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| | | |
|-------|--|----------|
| Sales | | 1,25,000 |
|-------|--|----------|

The company maintains a profit of 25% on cost.

You are required to prepare a cost sheet for the month of November 2017 with all elements. 8

- (b) CBA Ltd., manufactures certain grades of products known as M, B1 and B2. In course of manufacture of product M (main product), by-products- B1 and B2 emerge. The joint expenses of manufacture amount to Rs. 2,37,600.

All the three products are processed further after separation and sold as per details given below:

Product – M

| | | (By Products) | |
|--------------------------------------|----------|---------------|--------------|
| | | Product – B1 | Product – B2 |
| Sales (Rs.) | 2,00,000 | 1,20,000 | 80,000 |
| Cost incurred after separation (Rs.) | 20,000 | 15,000 | 10,000 |
| Profit as percentage on sales | 25 | 20 | 15 |

Total fixed selling expenses are 10% of total cost of sales which are apportioned to the three products in the ratio of 20:40:40.

Required:

- (i) Prepare a statement showing the apportionment of joint costs to the products (M, B1 and B2)
- (ii) If the product B1 (by product) is not subject to further processing and is sold at the point of separation, for which there is a market at Rs.1,00,440 without incurring any selling expenses, would you advise its disposal at this stage? Show the workings.

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Answer:

4. (a)

Statement of Cost and Profit

| Particulars | Amount in Rs. |
|---|---------------|
| Opening Stock of Raw Materials | 10,000 |
| Purchase of Raw Materials | 40,000 |
| | 50,000 |
| Less: Closing Stock of Raw Materials | 20,000 |
| Cost of Materials consumed | 30,000 |
| Add: Direct Labour Cost | 20,000 |
| Prime Cost | 50,000 |
| Add: Factory Overheads | 16,000 |
| | 66,000 |
| Add: Opening Stock of Work-in –Progress | 8,000 |
| | 74,000 |
| Less: Closing Stock of Work-in-Progress | 4,000 |
| Factory Cost | 70,000 |
| Add: Office Expenses | 10,000 |
| Cost of Production | 80,000 |
| Add: Opening Stock of Finished Goods | 10,000 |
| | 90,000 |
| Less: Closing Stock of Finished Goods | 5,000 |
| Cost of Goods sold | 85,000 |
| Add: Selling Expenses | 15,000 |
| Total Cost | 1,00,000 |
| Add: Profit | 25,000 |
| Sales | 1,25,000 |

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Workings: Calculation of purchase of raw materials

| Details | Amount in Rs. |
|--|---------------|
| Sales | 1,25,000 |
| Less: Profit | <u>25,000</u> |
| Total Cost | 1,00,000 |
| Less: Selling Expenses | <u>15,000</u> |
| Cost of Goods Sold | 85,000 |
| Add: Closing Stock of Finished Goods | <u>5,000</u> |
| | 90,000 |
| Less: Opening Stock of Finished Goods | <u>10,000</u> |
| Cost of Production | 80,000 |
| Less: Office Expenses | <u>10,000</u> |
| Factory Cost | 70,000 |
| Add: Closing Stock of Work-in-Progress | <u>4,000</u> |
| | 74,000 |
| Less: Opening Stock of Wok-in-Progress | <u>8,000</u> |
| | 66,000 |
| Less: Factory Overheads | <u>16,000</u> |
| Prime Cost | 50,000 |
| Less: Direct Labour Cost | <u>20,000</u> |
| Cost of Raw Materials consumed | 30,000 |
| Less: Opening Stock of Raw Materials | <u>10,000</u> |
| | 20,000 |
| Add: Closing Stock of Raw Materials | <u>20,000</u> |
| Purchase of Raw Materials | <u>40,000</u> |

(b) (i) Statement of Apportionment of Joint Cost

| Particulars | Total | Product | By-Products | |
|--|-----------------|-----------------|---------------|---------------|
| | | M | B1 | B2 |
| | Rs. | Rs. | Rs. | Rs. |
| Sales | 4,00,000 | 2,00,000 | 1,20,000 | 80,000 |
| Less: Profit | <u>86,000</u> | <u>50,000</u> | <u>24,000</u> | <u>12,000</u> |
| Cost of Sales | 3,14,000 | 1,50,000 | 96,000 | 68,000 |
| Less: Selling & Distribution Expenses (10% of Rs. 3,14,000 in the Ratio 20:40:40) | <u>31,400</u> | <u>6,280</u> | <u>12,560</u> | <u>12,560</u> |
| Cost of Production | 2,82,600 | 1,43,720 | 83,440 | 55,440 |
| Less: After separation Cost | <u>45,000</u> | <u>20,000</u> | <u>15,000</u> | <u>10,000</u> |
| Joint Cost | <u>2,37,600</u> | <u>1,23,720</u> | <u>68,440</u> | <u>45,440</u> |

- (ii) By product B1 earns Rs. 24,000 as profit after separation
 Profit before separation = Rs. 1,00,440 – Rs. 68,440 = Rs. 32,000
 If By product B1 is sold before further processing, then the profit of the by product may be increased by Rs. (32,000 - 24,000) = Rs. 8,000.
 Hence it is advisable to sell the product B1 at the point of separation.

5. (a) JANATA TRANSPORT LTD. a Transport Company is running 4 buses between two towns which are 50 kms. away. Seating capacity of each bus is 40 passengers. The following information is obtained from its books for November, 2017:

| Particulars | Rs. |
|--|---------------|
| Wages of drivers, conductors and cleaners | 24,000 |
| Salaries of office and supervisory staff | 10,000 |
| Diesel, oil and other lubricants | 40,000 |
| Repairs and maintenance | 8,000 |
| Taxes, insurance etc. | 16,000 |
| Depreciation of buses | 26,000 |

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| | |
|----------------------------|--------|
| Interest and other charges | 20,000 |
|----------------------------|--------|

Actual passengers carried were 75% of the seating capacity. All the 4 buses ran on all the days of the month. Each bus made one to and fro round trip per day.
Prepare the Operating Cost Statement and determine the cost per passenger km. for each bus. 8

- (b) A contractor, who prepares his accounts on 31st March each year, commenced a Contract No. 220 on 1st July, 2016. The following information is revealed from his costing records on 31st March, 2017:

| Particulars | (Rs.) |
|------------------------|----------|
| Materials sent to site | 2,51,000 |
| Labour | 5,65,600 |
| Foreman's salary | 81,300 |

A machine costing Rs.2,60,000 remained in use on site for 146 days. Its working life is estimated at 7 years and final scrap value at Rs. 15,000. A supervisor is paid Rs. 8,000 per month and has devoted one half of his time on the contract. All other expenses amount to Rs. 1,36,500. Materials at site on 31st March, 2017 cost Rs. 35,400. The contract price is Rs. 20,00,000. On 31st March, 2017 two-third of the contract was completed, however, the architect gave certificate only for 50% of the contract price and Rs. 7,50,000 had so far been paid on account.

Prepare Contract Account and state how much profit or loss should be included on 31st March, 2017 in financial accounts. 7

Answer:

5. (a) Operating Cost Statement

| Particulars | | Amount in Rs. |
|-------------|---|-----------------|
| (A) | Fixed Costs or Fixed Charges: | |
| | Wages of Drivers, Conductors and Cleaners | 24,000 |
| | Salary of Office and Supervisory Staff | 10,000 |
| | Taxes, Insurance etc. | 16,000 |
| | Interest and other charges | 20,000 |
| | Depreciation of buses | <u>26,000</u> |
| | Total Fixed Costs | <u>96,000</u> |
| (B) | Variable Costs or Running Charges: | |
| | Diesel, Oil and other Lubricants | 40,000 |
| | Repairs and Maintenance | <u>8,000</u> |
| | Total Variable Costs or Running Charges | <u>48,000</u> |
| (C) | Total Operating Charges or Cost (A + B) | <u>1,44,000</u> |
| (D) | Effective Passenger kms. | 3,60,000 |
| (E) | Cost per Passenger km. (C/D) | 0.40 |

Note: Depreciation can also be shown as Variable Cost or Running Charges as per study module.

Working Note:

Calculation of Effective Passenger kms.:

kms. in one round trip = 50 x 2 = 100 kms

Passenger kms. = Buses x Trip kms. x Trips x Days x Passengers x Capacity

= 4 x 100 x 1 x 30 x 40 x 75%

= 3,60,000 Passenger kms.

(b)

Working Notes:

- (i) Calculation of Depreciation on Machine:

Cost of Machine Rs. 2,60,000

Less: Scrap Value Rs. 15,000

Cost of Machine to be written off Rs. 2,45,000

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- Depreciation of 1 Year = Rs. 2,45,000/7 = Rs. 35,000
 Depreciation for 146 days = Rs. 35,000 (146/365) = Rs. 14,000
- (ii) Calculation of Cost of Work Uncertified:
 Cost of 2/3rd completed work = Rs. 10,49,000
 Total Cost of completed Contract = Rs. 10,49,000 × 3/2 = Rs. 15,73,500
 Part of uncertified work = 2/3 – 1/2 = 1/6
 Therefore, Cost of uncertified work = Rs. 15,73,500 × 1/6 = Rs. 2,62,250
- (iii) Profit Transferred to Profit and Loss Account:

$$\text{Notional Profit} \times \frac{2}{3} \times \frac{7,50,000}{10,00,000} = \text{Rs. } 1,06,625$$

Contract Account

| Dr. | (for the year ended 31 st March, 2017) | | Cr. |
|---|---|-----------------------------|------------------|
| Particulars | Rs. | Particulars | Rs. |
| To Materials | 2,51,000 | By Materials at site | 35,400 |
| To Labour | 5,65,600 | By Balance c/d (Total Cost) | 10,49,000 |
| To Foreman's Salary | 81,300 | | |
| To Supervisor's Salary (Rs. 8,000 × $\frac{1}{2}$ × 9) | 36,000 | | |
| To Depreciation on Machine | 14,000 | | |
| To other Expenses | <u>1,36,500</u> | | |
| | <u>10,84,400</u> | | <u>10,84,400</u> |
| To Balance b/d | 10,49,000 | By Work-in-Progress: | |
| To Notional Profit c/d | 2,13,250 | Certified Rs. | |
| | | 10,00,000 | |
| | | Uncertified Rs. | <u>12,62,250</u> |
| | | <u>2,62,250</u> | |
| | <u>12,62,250</u> | | <u>12,62,250</u> |
| To profit & Loss Account | 1,06,625 | By Notional Profit b/d | 2,13,250 |
| To Work-in-Progress A/c (Reserve) | <u>1,06,625</u> | | |
| | <u>2,13,250</u> | | <u>2,13,250</u> |

6. (a) ANKIT LTD. a manufacturing Company which produces three products furnishes the following information for the year 2016-17:

| Particulars | Products | | |
|---|----------------|----------------|----------------|
| | A | B | C |
| Selling Price (per unit) | Rs. 200 | Rs. 150 | Rs. 100 |
| Profit Volume Ratio | 10% | 20% | 40% |
| Raw Material content as a % of Variable Cost | 50% | 50% | 50% |
| Maximum Sales Potential (units) | 40,000 | 25,000 | 10,000 |

Fixed costs are estimated at Rs. 12 lakhs. The firm uses same raw material in all the three products. Raw material is in 'Short Supply'. The firm has a quota for the supply of raw materials of the value of Rs. 36 lakhs for the year 2016-17 for the production of three products to meet sales demand.

Required:

Determine the optimal product mix and ascertain the maximum profit therefrom. 8

- (b) The following figures are obtained from the records of P. Ltd.:

| | 2015-16 (Rs.) | 2016-17 (Rs.) |
|--|---------------|---------------|
| | | |

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| | | |
|------------|--------|----------|
| Sales | 80,000 | 1,00,000 |
| Net Profit | 10,000 | 16,000 |

Required:

Calculate the following:

- (i) Profit Volume Ratio
- (ii) Break Even Point
- (iii) Profit or loss at sales of Rs. 40,000
- (iv) Sales required to earn a profit of Rs. 22,000
- (v) Margin of Safety if sales is Rs. 55,000

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Answer:

6. (a) Marginal Cost Statement

| Particulars | Product | | |
|---|---|----------------------------------|---------------------------------|
| | A (Rs.) | B (Rs.) | C (Rs.) |
| Selling Price (SP) | 200 | 150 | 100 |
| Less: Variable Cost (VC) = SP -(SP × P/V Ratio) | 180 | 120 | 60 |
| Contribution per Unit (SP –VC) | 20 | 30 | 40 |
| Contribution per Key-Factor {C/KF(50% of VC)} | 0.22 | 0.50 | 1.33 |
| Ranking | III | II | I |
| Units Produced | 20,000 (18,00,000/90) | 25,000 (Maximum) | 10,000 (Maximum) |
| Raw Material used (Rs.) | 18,00,000 (Rs.36,00,000 – Rs.18,00,000) | 15,00,000 (25,000 × Rs.60) | 3,00,000 (10,000 × Rs.30) |

Optimal Product Mix:

- Product A 20,000 units (From remaining raw material)
- Product B 25,000 units (Maximum)
- Product C 10,000 units (Maximum)

Calculation of Profit

| Particulars | (Rs.) |
|--|------------------|
| Product A 20,000 units x Rs. 20 (C per unit) | 4,00,000 |
| Product B 25,000 units x Rs. 30 | 7,50,000 |
| Product C 10,000 units xRs. 40 | <u>4,00,000</u> |
| Total Contribution | 15,50,000 |
| Less : Fixed Cost | <u>12,00,000</u> |
| Maximum Profit | <u>3,50,000</u> |

(b) (i) Profit Volume Ratio:

$$\begin{aligned} \text{P/V Ratio} &= (\text{Change in Profit} / \text{Change in Sales}) \times 100 \\ &= (\text{Rs. } 6,000 / 20,000) \times 100 = 30\% \end{aligned}$$

| | Sales (Rs.) | Profit (Rs.) |
|-----------|-------------|--------------|
| * 2016-17 | 1,00,000 | 16,000 |
| 2015 -16 | 80,000 | 10,000 |
| | 20,000 | 6,000 |

(i) Break Even Point (BEP):

$$\begin{aligned} \text{BEP} &= \text{Sales} \times \text{P/V Ratio (Contribution)} = \text{Fixed Cost (FC)} + \text{Profit or,} \\ \text{Rs. } 80,000 \times 30\% &= \text{Fixed Cost} + \text{Rs. } 10,000 \text{ or,} \\ \text{Rs. } 24,000 &= \text{Fixed Cost} + \text{Rs. } 10,000 \text{ Or Fixed Cost} = \text{Rs. } 14,000 \end{aligned}$$

Or

$$\begin{aligned} \text{Rs. } 1,00,000 \times 30\% &= \text{FC} + \text{Rs. } 16,000 \text{ or,} \\ \text{Rs. } 30,000 &= \text{FC} + \text{Rs. } 16,000 \text{ Or FC} = \text{Rs. } 14,000 \end{aligned}$$

$$\text{Now, BEP} = \text{Sales} \times \text{P/V Ratio} = \text{FC or, Sales} \times 30\% = \text{Rs. } 14,000 \text{ or BEP} = \text{Rs. } 46,667$$

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- Or, BEP Sales = Fixed Cost/ (P/V Ratio) = Rs.14,000/0.30 =Rs.46,667
- (ii) Profit or Loss at Sales of Rs. 40,000:
 We know that : Sales × P/V Ratio = Fixed Cost + Profit
 \therefore Rs. 40,000 × 30% = Rs. 14,000 + Profit or,
 Rs. 12,000 = Rs. 14,000 + Profit or Profit = (-) Rs. 2,000
 When Sales are Rs. 40,000, loss is Rs. 2,000.
- (iii) Sales required to earn a Profit of Rs. 22,000:
 We know that: Sales × P/V Ratio = Fixed Cost + Profit or,
 $\text{Sales} \times 30\% = \text{Rs.}14,000 + \text{Rs.}22,000$ or Sales = Rs. 1,20,000
- (iv) Margin of Safety if Sales is Rs.55,000:
 Margin of Safety (MS) = Sales at Activity Level – Break Even Sales
 = Rs. 55,000 – Rs. 46,667 orRs. = Rs.8,333

7. (a) The standard cost card of A & Co. shows the following costs:

| | |
|--------------------------------------|-------------------|
| Material cost - 2 kg @ Rs. 2.50 each | Rs. 5.00 per unit |
| Wages - 2 hours @ 50 paise each | Re.1.00 per unit |

The actual data from business operations are as follows:

| | |
|------------|-------------|
| Production | 8,000 units |
|------------|-------------|

Actual total cost of production:

| | |
|---|------------|
| Material cost - 16,500 kg @ Rs. 2.40 each | Rs. 39,600 |
| Wages -18,000 hours @ 40 paise each | Rs. 7,200 |

Calculate the following variances:

- (i) Material Cost Variance (MCV);
- (ii) Material Price Variance (MPV);
- (iii) Material Usage Variance (MUV);
- (iv) Labour Cost Variance (LCV);
- (v) Labour Rate Variance (LRV);
- (vi) Labour Efficiency Variance (LEV).

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(b) Summarised below are the revenue and expenditure figures of AB Ltd. for the month of March to August,2017:

| Month | Sales (Rs.) | Purchases (Rs.) | Wages (Rs.) | Expenses (Rs.) |
|--------|-------------|-----------------|-------------|----------------|
| March | 6,50,000 | 4,00,000 | 1,20,000 | 50,000 |
| April | 7,00,000 | 4,80,000 | 1,50,000 | 50,000 |
| May | 7,50,000 | 4,50,000 | 1,50,000 | 60,000 |
| June | 8,00,000 | 4,80,000 | 1,80,000 | 60,000 |
| July | 8,20,000 | 4,00,000 | 1,80,000 | 80,000 |
| August | 8,90,000 | 5,00,000 | 2,00,000 | 80,000 |

The following further information is available:

- (i) 10% Purchases and sales are on cash basis.
- (ii) Advance payment of income tax in August, 2017 Rs. 50,000.
- (iii) Plant purchased and price to be paid in June, 2017 Rs. 1,00,000.
- (iv) Time lag-

| | |
|------------------|----------|
| Credit sales | 2 months |
| Credit purchases | 1 month |
| Wages | ½ month |
| Expenses | ½ month |

Required:

Prepare a Cash Budget for 3 months starting on 1st June, 2017 when cash balance is Rs. 2,00,000.

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Answer:

7. (a)

Working Notes:

Standard Quantity for actual output = 8,000 Units × 2 kg. = 16,000 kg.
 Standard Hours for actual output = 8,000 Units × 2 hours = 16,000 hours
 Standard Cost of Material = SQ × SP = 16,000 kg. × Rs.2.50 = Rs. 40,000
 Actual Cost of Material AQ × AP = 16,500 kg. × Rs.2.40 = Rs. 39,600
 Standard Cost of Wages = SH × SR = 16,000 hours × Re.0.50 = Rs. 8,000
 Actual Cost of Wages = AH × AR = 18,000 hours × Re. 0.40 = Rs. 7,200

Material Variances:

- (i) MCV = TSC – TAC = Rs. 40,000 – Rs.39,600 = Rs. 400(F)
 (ii) MPV = AQ(SP – AP) = 16,500 kg. (Rs.2.50 – Rs.2.40) = Rs. 1,650 (F)
 (iii) MUV = SP(SQ – AQ) = Rs. 2.50(16,000kg. – 16,500 kg.) = Rs. 1,250(A)

Labour Variances:

- (iv) LCV = SC – AC = Rs. 8,000 – Rs.7,200 = Rs. 800(F)
 (v) LRV = AH (SR – AR) = 18,000hours (Re.0.50 – Re. 0.40) = Rs. 1,800(F)
 (vi) LEV = SR(SH – AH) = Re.0.50 (16,000 hours – 18,000 hours) = Rs. 1,000 (A)

(b)

Working Notes:

(i) Collection from Debtors:

| | June (Rs.) | July (Rs.) | August (Rs.) |
|--|-----------------|-----------------|-----------------|
| Sales for April, May and June respectively | 7,00,000 | 7,50,000 | 8,00,000 |
| Less: 10% for Cash Sales | <u>70,000</u> | <u>75,000</u> | <u>80,000</u> |
| Credit Sales (Collection from Debtors) | <u>6,30,000</u> | <u>6,75,000</u> | <u>7,20,000</u> |

(ii) Payment to Creditors:

| | June (Rs.) | July (Rs.) | August (Rs.) |
|---|-----------------|-----------------|-----------------|
| Purchases for the preceding month | 4,50,000 | 4,80,000 | 4,00,000 |
| Less: 10% for Cash Purchases | <u>45,000</u> | <u>48,000</u> | <u>40,000</u> |
| Credit Purchases (Payment to Creditors) | <u>4,05,000</u> | <u>4,32,000</u> | <u>3,60,000</u> |

Cash Budget (for June to August, 2017)

| Particulars | June (Rs.) | July (Rs.) | August (Rs.) |
|-------------------------|-----------------|-----------------|-----------------|
| Cash Balance | 2,00,000 | 1,32,000 | 1,67,000 |
| Receipts: | | | |
| Cash Sales | 80,000 | 82,000 | 89,000 |
| Collection from Debtors | <u>6,30,000</u> | <u>6,75,000</u> | <u>7,20,000</u> |
| Total Receipts (A) | <u>9,10,000</u> | <u>8,89,000</u> | <u>9,76,000</u> |
| Payments: | | | |
| Cash Purchases | 48,000 | 40,000 | 50,000 |
| Payment to Creditors | 4,05,000 | 4,32,000 | 3,60,000 |
| Wages | 1,65,000 | 1,80,000 | 1,90,000 |
| Expenses | 60,000 | 70,000 | 80,000 |
| Plant | 1,00,000 | | |
| Advance Income Tax | | | 50,000 |
| Total Payments (B) | <u>7,78,000</u> | <u>7,22,000</u> | <u>7,30,000</u> |
| Cash Balance (A – B) | <u>1,32,000</u> | <u>1,67,000</u> | <u>2,46,000</u> |

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8. Answer *any three* out of the following four questions:

5×3=15

- (a) Differentiate between cost control and cost reduction.
- (b) Cost accounting has emerged as a specialized discipline due to various factors. List out these factors. (*Any five*)
- (c) What is Economic Order Quantity (EOQ)? State the assumptions underlying EOQ.
- (d) What is Principal Budget Factor? Explain your answer with suitable example.

Answer:

8. (a) Cost **Control** vs. **Cost Reduction** : Both cost control and cost reduction are efficient tools for management but their concepts and procedure are widely different. The main differences are as follows:

| | Cost Control | Cost Reduction |
|-------|---|---|
| (i) | Cost control represents efforts made towards achieving target or goal. | Cost reduction represents the achievement in reduction of cost. |
| (ii) | The Process of cost control is to setup a target, ascertain the actual performance and compare it with the target, investigate the variances, and take remedial measures. | Cost reduction is not concerned with maintenance of performance according to standards. |
| (iii) | Cost control assumes the existence of standards or norms which are not challenged. | Cost reduction assumes the existence of concealed potential savings in standards or norms which are therefore subjected to a constant challenge with a view to improvement by bringing out savings. |
| (iv) | Cost control is a preventive function. Costs are optimized before they are incurred. | Cost reduction is a corrective function. It operates even when an efficient cost control system exists. There is room for reduction in the achieved costs under controlled conditions. |
| (v) | Cost control lacks dynamic approach. | Cost reduction is a continuous process of analysis by various methods of all the factors affecting costs, efforts and functions in an organization. The main stress is upon the why of a thing and the aim is to have continual economy in costs. |

- (b) The main factors attributable for emerging cost accounting as a specialized discipline are as under: (*Any Five Factors*)
- (i) Limitations placed on financial accounting.
 - (ii) Improved cost consciousness.
 - (iii) Rapid industrial development after industrial revolution and World wars.
 - (iv) Growing competition among the manufacturers.
 - (v) To control galloping price rise, the cost of computing the precise cost of product / service.
 - (vi) To control cost, several legislations passed throughout the World and in India too, such as Essential Commodities Act, Industrial Development and Regulation Act (IDRA), etc.

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- (c) Economic Order Quantity (EOQ): EOQ is the size of the order for which both ordering and carrying costs are minimum.

Assumptions underlying EOQ:

- (i) Ordering cost per order and carrying cost per unit per annum are known and they are fixed.
- (ii) Anticipated usage of material in units is known.
- (iii) Cost per unit of the material is constant and is known as well.
- (iv) The quantity of material ordered is received immediately i.e. lead time is zero.

- (d) Principal Budget Factor:

Budgets cover all the functional areas of the organisation. For the effective implementation of the budgetary system, all the functional areas are to be considered which are interlinked. Because of these interlinks, certain factors have the ability to affect all other budgets. Such factor is known as principal budget factor.

Principal budget factor is the factor the extent of influence of which must first be assessed in order to ensure that the functional budgets are reasonably capable of fulfillment. A principal budget factor may be lack of demand, scarcity of raw material, non-availability of skilled labour, inadequate working capital etc. For example, an organisation has the capacity to produce 2,500 units per annum. But the production department is able to produce only 1,800 units due to non-availability of raw materials. In this case, non-availability of raw materials is the principal budget factor (limiting factor). If the sales manager estimates that he can sell only 1,500 units due to lack of demand, then lack of demand is the principal budget factor. This concept is also known as key factor, or governing factor. This factor highlights the constraints within which the organization functions.