# PAPER – 8: COST ACCOUNTING & FINANCIAL MANAGEMENT

The following table lists the learning objectives and the verbs that appear in the syllabus learning aims and examination questions:

| | Learning objectives | Verbs used | Definition |
|---|---|---|---|
| LEVEL B | KNOWLEDGE<br><br>What you are expected to know | List | Make a list of |
| | | State | Express, fully or clearly, the details/facts |
| | | Define | Give the exact meaning of |
| | COMPREHENSION<br><br>What you are expected to understand | Describe | Communicate the key features of |
| | | Distinguish | Highlight the differences between |
| | | Explain | Make clear or intelligible/ state the meaning or purpose of |
| | | Identity | Recognize, establish or select after consideration |
| | | Illustrate | Use an example to describe or explain something |
| | APPLICATION<br><br>How you are expected to apply your knowledge | Apply | Put to practical use |
| | | Calculate | Ascertain or reckon mathematically |
| | | Demonstrate | Prove with certainty or exhibit by practical means |
| | | Prepare | Make or get ready for use |
| | | Reconcile | Make or prove consistent/ compatible |
| | | Solve | Find an answer to |
| | | Tabulate | Arrange in a table |
| | ANALYSIS<br><br>How you are expected to analyse the detail of what you have learned | Analyse | Examine in detail the structure of |
| | | Categorise | Place into a defined class or division |
| | | Compare and contrast | Show the similarities and/or differences between |
| | | Construct | Build up or compile |
| | | Prioritise | Place in order of priority or sequence for action |
| | | Produce | Create or bring into existence |

**Paper – 8: Cost Accounting & Financial Management**

**Full Marks: 100** **Time Allowed: 3 Hours**

**This paper contains 3 questions. All questions are compulsory, subject to instruction provided against each question. All workings must form part of your answer.**
**Assumptions, if any, must be clearly indicated.**

**1. Answer all questions:** **[2×10=20]**

**(a) A manufacturer has to supply his customer 600 units of his product per year. Storage is not allowed and the inventory carrying cost amounts to 0.60 per unit per year. The set-up cost per run is ₹80. Calculate the minimum average yearly cost.**

**Answer:**

$$EOQ = \sqrt{\frac{2ab}{cs}}$$

Where,
a = unit per year
b = Set up cost
c = Carrying cost

$$= \sqrt{\frac{2 \times 600 \times 80}{0.60}} = 400 \text{units}$$

No. of orders placed = 600 ÷ 400 = 1.5 or say 2 orders

| | |
|---|---|
| Set up cost for 2 orders @ ₹80 | ₹160 |
| Average inventory cost per year (400 x 0.60) ÷ 2 | ₹120 |
| Minimum average yearly cost | ₹280 |

**(b) B & Co. has recorded the following data in the two most recent periods:**

| Total cost of production (₹) | Volume of production (units) |
|---|---|
| **14,600** | **800** |
| **19,400** | **1,200** |

**What is the best estimate of the firm's fixed costs per period?**

**Answer:**

| Valuation of production (units) | Total cost of production |
|---|---|
| 800 | ₹14,600 |
| 1,200 | 19,400 |
| 400 units | 4,800 |

Variable cost per unit = ₹4,800/ 400 = ₹12 per unit
Total variable cost for 800 units = 800 x ₹12 = 9,600

| | |
|---|---|
| Total cost for 800 units (given) | 14,600 |
| Fixed Cost (₹14,600 - ₹9,600) | ₹5,000 |

**(c) The following data are available in respect of material X for the year ended 31st March. 2015**

| | |
|---|---|
| **Opening stock** | **₹90,000** |
| **Purchase during the year** | **₹2,70,000** |
| **Closing stock** | **₹1,10,000** |

**Calculate (i) Inventory turnover ratio: and (ii) the number of days for which the average inventory is held.**

**Answer:**

| | |
|---|---|
| Cost of raw material consumed: | |
| Opening stock of raw material on 1/4/2014 | ₹90,000 |
| Add: Purchase during the year | ₹2,70,000 |
| | ₹3,60,000 |
| Less: Closing stock of raw material | ₹1,10,000 |
| Cost of raw material consumed | ₹2,50,000 |

**(i)** $\text{Inventory turnover ratio} = \frac{\text{Cost of stock of raw material consumed}}{\text{Average stock of raw material}}$

= ₹2,50,000 ÷ {(90,000 + 1,10,000)/2} = 2.5

**(ii)** Average number of days for which the average inventory is held
Or Inventory turnover period = 365 days / 2.5 = 146 days

**(d) The actual machine hours worked in June' 2015, is for 35,000 units and the predetermined overhead recovery is @ ₹3 per unit, when actual overhead is ₹1,57,500, then what will be the outcome?**

**Answer:**

35,000 × 3 = ₹1,05,000
Actual Overhead – Pre-determined overhead = under absorbed overhead
So, ₹1,57,500 – ₹1,05,000
= ₹52,500

**(e) A worker has completed his job within 35 hours instead of 40 standard hours. What will be the earnings under rowan bonus plan of the worker, if the wages rate per hour is ₹36?**

**Answer:**

**Earning under Rowan Plan**

| | |
|---|---|
| Normal wages = 35 x ₹36 | ₹1260.00 |
| Bonus under Rowan Plan<br>(40 – 35) x 35/40 x ₹36 | ₹157.50 |
| | 1,417.50 |

**(f) Write two objectives of CAS-4.**

**Answer:**

The two objectives of CAS-4 are as follows:

- The purpose of this standard is to bring uniformity in the principles and methods used for determining the cost of production of excisable goods used for captive consumption.
- The cost statement prepared based on standard will be used for determination of assessable value of excisable goods used for captive consumption.

**(g) MN Ltd. has earnings before interest and taxes of ₹36 crores. The company has 7% debentures of ₹72 crores. Cost of equity is 12.5%. Ignore taxes. Estimate the overall cost of Capital?**

**Answer:**

Market value of Equity = [EBIT -I]/$K_e$

= [ 36 -5.04] Cr. /0.125

= 30.96 /0.125

= ₹247.68 Cr.

Total value of firm (v) = 247.68 + 72.00 = 319.68 cr.

So, $K_0$= EBIT/V = [36/319.68] x 100

=11.26%

**(h) R Ltd. earns ₹8 per share has capitalization rate of 10% and has a return on investment at the rate of 18%. According to Walter's Model, calculate the price per share at 28% dividend payout ratio.**

**Answer:**

DPS = 28% x EPS = 28% x ₹8 = ₹2.24.

So, Market value of share = $\dfrac{D + \frac{r}{k}(E - D)}{k}$

= [2.24 + {0.18/0.10 (8 -2.24)}] / 0.10 = [2.240 + 10.368]/0.10 = ₹126.08

**(i) Write the two assumptions of MM approach.**

**Answer:**

The two assumptions of MM approach are:

- The dividend payout ratio is 100%, which means there are no retained earnings.
- There are no corporate taxes. This assumption has been removed later

**(j) Given**

| | **Last year** | **Current year** |
|---|---|---|
| **Sales unit** | **2,000** | **2,800** |
| **Selling price per unit** | **₹10** | **₹10** |
| **EPS** | **₹9.60** | **₹38.40** |

**Calculate the Degree of Combined Leverage?**

**Answer:**

$$\text{Degree of combined leverage} = \frac{38.40 - 9.60 / 9.60}{2{,}800 - 2{,}000 / 2{,}000}$$
$$= 7.5$$

**2. Answer any three questions from a, b, c and d [3×16=48]**

**(a) (i) A company uses an old method of machining a part manufactured for sale. The estimates of operating details for the year 2013-14 are as under:**
**No. of parts to be manufactured and sold 30,000**
**Raw materials required per part: 10 kg. @ ₹ 2 kg.**
**Average wage rate per worker : ₹ 40 per day of 8 hrs.**
**Average labour efficiency 60%.**
**Standard time required to manufacture one part: 2 hrs.**
**Overhead rate ₹ 10 per clock hour.**
**Material handling expenses - 2% of the value of raw materials.**

**The company has a suggestion box scheme and an award equivalent to three months' saving in labour cost is passed on to the employee whose suggestion is accepted. In response to this scheme, a suggestion has been received from an employee to use a special Jig in the manufacture of the aforesaid part. The cost of the Jig which has life of one year is ₹ 3,000 and the use of the Jig will reduce the standard time by 12 minutes.**

**Required:**
**(i) Compute the amount of award payable to the employee who has given the suggestion**
**(ii) Prepare a statement showing the annual cost of production before and after the implementation of the suggestion to use the Jig and indicate the annual savings.**
**(iii) State the assumptions on which your calculations are based. [3+4+1=8]**

**Answer:**

**(i) Amount of Award payable to the employee**

| | |
|---|---|
| Wage rate per hour (₹ 40 ÷ 8) | = ₹ 5 per hour |
| Standard time for one part | = 2 hours |
| Standard time for 30,000 parts | = 60,000 hrs. |
| Average labour efficiency | = 60% |
| Actual time | = 60,000 ÷ 60% = 1,00,000 hrs. |
| Actual labour cost (1,00,000 hrs. × ₹ 5) | = ₹ 5,00,000 |
| Standard time for one part | = 2 hours |
| Less: Saving in standard time | = 12 minutes |
| Revised standard time | = 1 hrs. 48 minutes or 1.8 hrs. |
| Adjusted to 60% efficiency | = 1.8 hrs. ÷ 60% = 3 hrs. |
| Revised actual time for 30,000 parts | = 3 hrs. × 30,000 = 90,000 hrs. |
| Revised wages = 90,000 hrs. × ₹ 5 | = ₹ 4,50,000 |
| Annual saving in wage (₹ 5,00,000 - 4,50,000) | = ₹ 50,000 |
| Award to the employee (₹ 50,000 × 3/12) | = ₹ 12,500 |

**(ii) Statement showing the cost of production for 30,000 parts before and after implementation of the suggestion**

| | Before implementation | After implementation |
|---|---|---|

| | | |
|---|---|---|
| Raw Materials cost @ ₹ 20 | ₹ 6,00,000 | ₹ 6,00,000 |
| Wages | ₹ 5,00,000 | ₹ 4,50,000 |
| Prime Cost | 11,00,000 | 10,50,000 |
| Overheads @ ₹ 10 per hr. (actual) | 10,00,000 | 9,00,000 |
| Award to employee | - | 12,500 |
| Material handling expenses | 12,000 | 12,000 |
| Cost of Jig | - | 3,000 |
| Total | 21,12,000 | 19,77,500 |
| Annual savings | | ₹ 1,34,500 |

**(iii)** It is assumed that labour efficiency of 60% holds good even after implementation of the suggestion and the capacity saved is utilized for other jobs.

**2.**

**(a) (ii) A machine was purchased on January 1, 2014, for ₹5 lakhs. The total cost of all machinery inclusive of the new machine was ₹ 75 lakhs. The following further particulars are available:**

**Expected life of the machine 10 years.**
**Scrap value at the end of ten years ₹ 5,000**

**Repair and maintenance for the machine during the year ₹ 2,000. Expected number of working hours of the machine per year, 4,000 hours. Insurance premium annually for all the machines ₹ 4,500.**

**Electricity consumption for the machine per hour (@ 75 paise per unit) 25 units.**
**Area occupied by the machine 100 sq. ft.**
**Area occupied by other machine 1,500 sq. ft.**
**Rent per month of the department ₹ 800.**
**Lighting charges for 20 points for the whole department, out of which three points are for the machine ₹ 120 per month.**
**Compute the machine hour rate for the new machine on the basis of the data given above. [8]**

**Answer:**

**Computation of Machine Hour Rate**

| | **Total** | **Per Hour** |
|---|---|---|
| Expected number of machine hours | 4,000 hours | |
| Standing charges: | | |
| Depreciation (₹ 5,00,000 - 5,000) × 10 yrs | ₹ 49,500 | |
| Repairs and maintenance | ₹ 2,000 | |
| Insurance premium (4,500 × ₹ 5 lakhs) ÷ ₹ 75 lakhs | 300 | |
| Rent (₹ 800 × 12 months × 100 sq. ft) ÷ 1600 sq. ft. | 600 | |
| Lighting charges (₹ 120 × 12 × 3 points) ÷ 20 points | 216 | |
| Total standing charges | 52,616 | |
| Per hour (₹ 52,616 ÷ 4,000) | | ₹ 13.154 |
| Electricity consumption (25 units × ₹ 0.75) | | 18.750 |
| Machine Hour Rate | | 31.904 |

**2. (b) (i) Illustrate scrap. How do you treat scrap in Cost Accounts? [2+3]**

**Answer:**
This is also in the form of incidental material residue coming out of certain types of manufacturing processes but it is usually in small amounts and has low measurable utility or market value, recoverable without further processing.

Numerous examples of scrap may be given; scrap may arise in the form of turnings, borings, trimmings, fillings, shavings etc., from metals on which machine operations are carried out; saw dust and trimmings in the timber industry; dead heads and bottom ends in foundries; and cuttings, pieces, and split in leather industries. Scrap should always be physically available unlike waste which may or may not be present in the form of a residue

The treatment of scrap in cost accounts is normally as per the following details.

- If the value of scrap is negligible, the good units should bear the cost of scrap and any income collected will be treated as other income.
- If the value of scrap is considerable and identifiable with the process or job, the cost of job will be transferred to scrap account and any realization from sale of such scrap will be credited to the job or process account and any unrecovered balance in the scrap account will be transferred to the Costing Profit and Loss Account.
- If scrap value is quite substantial and it is not identifiable with a particular job or process, the amount will be transferred to factory overhead account after deducting the selling cost. This will reduce the cost of production to the extent of the scrap value.

**2. (b) (ii)**
**M/s. Sun & Moon Company Ltd. is experiencing high labour turnover in recent years. Management of the company would like you to submit a statement on the loss suffered by the company due to such labour turnover. Following facts are available from the records:**

**Sales ₹800 lakhs, Direct Materials ₹200 lakhs, Direct Labour ₹48 lakhs on 4,80,000 labour hours, other variable expenses ₹80 lakhs, Fixed Cost ₹90 lakhs.**

**Direct Labour hours include 10,000 Labour hours spent on trainees and replacement, only 50% of which were productive.**

**Further during the year 15,000 Labour hours of potential work could not be availed of, because of delayed replacement. Cost incurred due to separation and replacement amounted to ₹2 lakhs.**

**With these information, you are required to prepare a statement showing actual profit against profit which would have been realised had there been no labour turnover. [11]**

**Answer:**
**(I)** Calculation of direct labour cost if there was no labour turnover:
Actual direct labour cost per hour: = 48,00,000 ÷ 4,80,000 = ₹10 per direct labour hour.
Cost of man hours of potential work Lost due to delayed replacement
= 15,000 × 10 = -1,50,000.
Direct labour cost if there was no labour turnover
= 48,00,000 + 1,50,000 = ₹49,50,000

**(II)** Calculation of potential total sales if there was no labour turnover

| Particulars | Hours |
|---|---|

| | |
|---|---|
| Hours lost for delayed replacement | 15,000 |
| Unproductive hours (50% of 10,000) | 5,000 |
| Total hours lost | 20,000 |
| Actual Labour hours spent | 4,80,000 |
| Less: Unproductive hours | 5,000 |
| Productive hours worked | 4,75,000 |

Sales related to 4,75,000 productive hours = 800 Lakhs.

**(III)** Potential Sales lost due to loss of 20,000 hours
Direct labour hours: 8,00,00,000/4,75,000 (DLH) × 20,000 DLH.= ₹33,68,421
Total sales if there was no labour turnover = ₹8,00,00,000 + ₹33,68,421 = ₹8,33,68,421.

**(IV)** Variable expenses if there was no labour turnover: ₹2,80,000/8,00,000 ×8,33,68,421
= ₹2,91,78,947

Comparative statements showing actual profit vis-a-vis profit, which would have been realized if there was no labour turnover:

| Particulars | Actual (₹) | If no labour turnover (₹) |
|---|---|---|
| Sales | 8,00,00,000 | 8,33,68,421 |
| **Cost:** | | |
| Variable cost | 2,80,00,000 | 2,91,78,947 |
| Direct labour cost | 48,00,000 | 49,50,000 |
| Fixed cost | 90,00,000 | 90,00,000 |
| Separation cost | 2,00,000 | ------- |
| | 4,20,00,000 | 4,31,28,947 |
| Profit (Sales – Cost) | 3,80,00,000 | 4,02,39,474 |

Thus loss of profit due to labour turnover = ₹4,02,39,474 –₹3,80,00,000 = ₹22,39,474.

**2. (c) (i)**

**The books of Excellent Chemicals Limited reveal the following data regarding imported chemicals used in the manufacture of their products during 2014-15:**

| Chemicals | Quantity imported (kg.) | Rate (in U.S.$ per kg.) | Exchange Rate |
|---|---|---|---|
| **P** | **3,000** | **3.00** | **1 U.S. $ = ₹ 32.00** |
| **Q** | **4,500** | **2.40** | |
| **R** | **5,000** | **4.00** | |

**Import duty paid was 25% of invoice value for chemicals P and Q and 40% for chemical R. Insurance was paid @ 2.5% on invoice value and a sum of ₹ 75,000 was incurred towards freight and clearing charges. Stores overhead applied was 5% on the total purchase cost of materials. During the year 80% of the materials imported were issued to production. Assuming 4% allowance is provided to cover loss, ascertain (i) total cost of materials and (ii) value of closing stock of each type of chemicals.**

**What is the cost of each material charged to production?**

**Also prepare a statement showing (a) the quantity of material issued, (b) storage loss, and (c) closing stock of each type of chemicals. [ 4½+3+1½+3=12]**

**Answer:**

**Statement of Material Cost**

| Particulars | Types of Chemicals | | |
|---|---|---|---|
| | P | Q | R |
| Quantity (kg.) | 3,000 | 4,500 | 5,000 |
| Rate in U.S. $ per kg. | 3.00 | 2.40 | 4.00 |
| Value in U.S. $ | 9,000 | 10,800 | 20,000 |
| Value in ₹ (U.S. $ 1 = ₹ 32) | ₹ 2,88,000 | ₹ 3,45,600 | ₹ 6,40,000 |
| Import Duty (P & q : 25% of invoice value R : 40% of invoice value) | 72,000 | 86,400 | 2,56,000 |
| Insurance — 2.5% of invoice value | 7,200 | 8,640 | 16,000 |
| Freight and clearing charges apportioned on weight basis i.e. 3: 4.5 : 5 | 18,000 | 27,000 | 30,000 |
| Total Purchase Cost | 3,85,200 | 4,67,640 | 9,42,000 |
| Add: Stores Overhead 5% of Purchase cost | 19,260 | 23,382 | 47,100 |
| Total cost of materials | 4,04,460 | 4,91,022 | 9,89,100 |

Statement of Closing Stock

| | | | |
|---|---|---|---|
| Cost of material | 4,04,460 | 4,91,022 | 9,89,100 |
| Less: Issued to production (80%) | 3,23,568 | 3,92,818 | 7,91,280 |
| | 80,892 | 98,204 | 1,97,820 |
| Less: Allowance for storage loss (4%) | 3,236 | 3,928 | 7,913 |
| Value of closing stock | 77,656 | 94,276 | 1,89,907 |

Cost of Material charged to Production

| | | | |
|---|---|---|---|
| Value of material issued to production | 3,23,568 | 3,92,818 | 7,91,280 |
| Add: Allowance for storage loss | 3,236 | 3,928 | 7,913 |
| Cost of material charged to production | 3,26,804 | 3,96,746 | 7,99,193 |

Statement showing the quantity of materials issued, storage loss and in stock

| Chemicals | Quantity Imported (kg.) | Issued to production 80% (kg.) | Balance (kg.) | Storage loss 5% (kg.) | Closing Balance (kg.) |
|---|---|---|---|---|---|
| P | 3,000 | 2,400 | 600 | 30 | 570 |
| Q | 4,500 | 3,600 | 900 | 45 | 855 |
| R | 5,000 | 4,000 | 1,000 | 50 | 950 |

**2. (c) (ii) Discuss the advantages of Cost Accounting. [4]**

**Answer:**

Cost Accounting has manifold advantages, a summary of which is given below. It is not suggested that having installed a system of Cost Accounting, a concern will expect to derive all the benefits stated here. The nature and the extent of the advantages obtained will depend upon the type, adequacy and efficiency of the cost system installed and the extent to which the various levels of management are prepared to accept and act upon the advice rendered by the cost system.

The Cost Accounting System has the following advantages:-

(i) A cost system reveals unprofitable activities, losses or inefficiencies occurring in any form such as

(a) Wastage of man power, idle time and lost time.

(b) Wastage of material in the form of spoilage, excessive scrap etc., and
(c) Wastage of resources, e.g. inadequate utilization of plant, machinery and other facilities.

(ii) Cost Accounting locates the exact causes for decrease or increase in the profit or loss of the business. It identifies the unprofitable products or product lines so that these may be eliminated or alternative measures may be taken.

(iii) Cost Accounts furnish suitable data and information to the management to serve as guides in making decisions involving financial considerations.

(iv) Cost Accounting is useful for price fixation purposes. Although sale price is generally related more to economic conditions prevailing in the market than to cost, the latter serves as a guide to test the adequacy of selling prices.

**2. (d) (i)**

**A manufacturing unit produces two products M and N. The following information is furnished:**

| Particulars | Product M | Product N |
|---|---|---|
| **Units produced (Qty)** | **20,000** | **15,000** |
| **Units Sold (Qty)** | **15,000** | **12,000** |
| **Machine Hours utilised** | **10,000** | **5,000** |
| **Design charges** | **15,000** | **28,000** |
| **Software development charges** | **14,000** | **26,000** |

**Royalty paid on sales ₹ 54,000 [@ ₹ 2 per unit sold, for both the products]; Royalty paid on units produced ₹ 35,000 [@ ₹ 1 per unit purchased, for both the products], Hire charges of equipment used in manufacturing process of Product M only ₹ 15,000, Compute the Direct Expenses. [6]**

**Answer:**

**Computation of Direct Expenses**

| | Particulars | Product M | Product N |
|---|---|---|---|
| | Royalty paid on Sales | 30,000 | 24,000 |
| Add | Royalty paid on units produced | 20,000 | 15,000 |
| Add | Hire charges of equipment used in manufacturing process of Product X only | 15,000 | — |
| Add | Design Charges | 15,000 | 28,000 |
| Add | Software development charges related to production | 14,000 | 26,000 |
| | Direct Expenses | 94,000 | 93,000 |

**Note:**

(i) Royalty on production and royalty on sales are allocated on the basis of units produced and units sold respectively. These are directly identifiable and traceable to the number of units produced and units sold. Hence, this is not an apportionment.

(ii) No adjustments are made related to units held, i.e. closing stock.

**2. (d) (ii)**

**State the term Just-in-Time (JIT) and list out its advantages. 5**

**Answer:**

Just in time (JIT) is a production strategy that strives to improve a business return on investment by reducing in-process inventory and associated carrying costs. Inventory is seen as incurring costs, or waste, instead of adding and storing value, contrary to traditional accounting. In short,

the Just-in-Time inventory system focuses on "the right material, at the right time, at the right place, and in the exact amount" without the safety net of inventory.

The advantages of Just-in-Time system are as follows:-

(a) Increased emphasis on supplier relationships. A company without inventory does not want a supply system problem that creates a part shortage. This makes supplier relationships extremely important.
(b) Supplies come in at regular intervals throughout the production day. Supply is synchronized with production demand and the optimal amount of inventory is on hand at anytime. When parts move directly from the truck to the point of assembly, the need for storage facilities reduced.
(c) Reduces the working capital requirements, as very little inventory is maintained.
(d) Minimizes storage space.
(e) Reduces the chance of inventory obsolescence or damage.

**2. (d) (iii)**

**Classify the following overhead items according to function:**

**(i) Drawing office salaries, (ii) Rent of warehouse, (iii) Remuneration of legal advice, (iv) Depreciation of delivery van, (v) Salary of Production Manager, (vi) Uniforms of sanitary workers, (vii) Secondary packing with the name of the company, (viii) Establishment expenses, (ix) Depreciation of patterns and dies, (x) Wages of normal idle time. [5]**

**Answer:**

(i) Office and administration overhead
(ii) Selling & Distribution overhead
(iii) Office and administration overhead,
(iv) Selling& Distribution overhead,
(v) Factory overhead,
(vi) Factory overhead,
(vii) Selling & distribution overhead
(viii) Office and administration overhead
(ix) Factory overhead,
(x) Factory overhead.

**3. Answer any two questions from a, b and c. [2×16=32]**

**(a) (i) Write a short-note on GDR (Global Depository Receipt). [4]**

**Answer:**

A GDR is a negotiable instrument, basically a bearer instrument which is traded freely in the international market either through the stock exchange or over the counter or among Qualified International Buyers (QIB). It is denominated in US Dollars and represents shares issued in the local currency.

**Characteristics:**

- The shares underlying the GDR do not carry voting rights.
- The instruments are freely traded in the international market.
- The investors earn fixed income by way of dividend.
- GDRS can be converted into underlying shares, depository/ custodian banks reducing the issue

**The GDR operates in the following way in Indian market:**

- An Indian company issues ordinary equity shares.
- These shares are deposited with a custodian bank (mostly domestic bank).
- The custodian bank establishes a link with a depository bank overseas.
- The depository bank, in turn issues depository receipts in dollars.

- Funds are raised when the foreign entities purchase those depository receipts at an agreed price.
- The dividends on such issues are paid by the issuing company to the depository bank in local currency.
- The depository bank converts the dividends into US Dollars at the ruling exchange rate and distributes it among the GDR holders.

**3. (a) (ii)**

**A manufacturing company is planning to install either of the following two machines which are mutually exclusive. The details of their purchase price and Operating costs are as given below:**

| | Machine I ₹ | Machine II ₹ |
|---|---|---|
| **Purchase price including cost of installation** | **1,00,000** | **80,000** |
| **Operating costs: Year wise:** | | |
| **1** | **20,000** | **25,000** |
| **2** | **20,000** | **25,000** |
| **3** | **20,000** | **25,000** |
| **4** | **25,000** | **36,000** |
| **5** | **25,000** | **36,000** |
| **6** | **25,000** | **36,000** |
| **7** | **30,000** | **—** |
| **8** | **30,000** | **—** |
| **9** | **30,000** | **—** |
| **10** | **30,000** | **—** |

**The salvage value of the Machine I is expected to be ₹15,000 at the end of its life of 10 years, while for Machine II it is ₹10,000 at the end of the 6th year.**
**The cost of capital is 15%.**
**You can assume that technically both the Machines are equally useful.**

**You are required to answer the following:**
**(i) What is the present value of costs for Machine I?**
**(ii) What is the present value of costs for Machine II?**
**(iii) What is the annual capital charge for Machine I?**
**(iv) What is the annual capital charge for Machine II?**
**(v) Which of the Machines is cheaper?**

**[Given:**

| Year | Rate | PVFA | PVF |
|---|---|---|---|
| **3** | **15%** | **2.283** | **0.658** |
| **4** | **15%** | **2.855** | **0.572** |
| **6** | **15%** | **3.784** | **0.432** |
| **10** | **15%** | **5.019** | **0.247]** |

**[2+2+2+2+1]**

**Answer:**

Since initial outlay and operating costs are given, the appropriate method to be applied is 'Annual capital charge'.

**The present value of Cost for Machine I and machine II**

| Year | Operating Cost of Machine I (₹) | Operating Cost of machine II (₹) | PVF | PV of Machine I (₹) | PV of Machine II (₹) |
|---|---|---|---|---|---|
| 1 | 20,000 | 25,000 | 0.870 | 17,400 | 21,750 |
| 2 | 20,000 | 25,000 | 0.756 | 15,120 | 18,900 |
| 3 | 20,000 | 25,000 | 0.658 | 13,160 | 16,450 |
| 4 | 25,000 | 36,000 | 0.572 | 14,300 | 20,592 |
| 5 | 25,000 | 36,000 | 0.497 | 12,425 | 17,892 |
| 6 | 25,000 | 36,000 | 0.432 | 10,800 | 15,552 |
| 7 | 30,000 | ------- | 0.376 | 11,280 | ------ |
| 8 | 30,000 | ------- | 0.327 | 9,810 | ------ |
| 9 | 30,000 | ------- | 0.284 | 8,520 | ----- |
| 10 | 30,000 | ------- | 0.247 | 7,410 | ------ |
| Total cost | | | | 1,20,225 | 1,11,136 |
| Purchase Price including installation | | | | 1,00,000 | 80,000 |
| PV of total outflow | | | | 2,20,225 | 1,91,136 |
| Less: Salvage value | | | | 3,705 | 4,320 |
| Net Present value of Outflow | | | | 2,16,520 | 1,86,816 |
| PVAF | | | | 5.019 | 3.784 |
| Annual capital Charge | | | | 43,140.07 | 49,369.98 |

As annual capital Charge for machine I is low, machine I is Cheaper.

**Working Notes:**

**Calculation of salvage Value**

| Machine I | Machine II |
|---|---|
| ₹15,000 × 0.247 =₹3,705 | ₹10,000 × 0.432 = ₹4,320 |

**3. (a) (iii) List the usual forms of bank credit available in India for a business. [3]**

**Answer:**

In India banks may give financial assistance in different shapes and forms. The usual form of bank credit is as follows:

1. Overdraft
2. Cash Credit
3. Bills Purchased and Bills Discounting
4. Letter of Credit
5. Working Capital term Loan
6. Funded interest term Loa

**3. (b) (i)**

**The credit terms of a firm currently is Net 30. It is considering to change it to Net 60. This will have the effect of increasing the firm's sales. As the firm will not relax credit standard, the bad debts losses are expected to remain at the same percentage, i.e., 3 per cent of sales. Incremental production, selling and collection costs are 80 per cent of sales and expected to remain constant over the range of anticipated sales increase. The relevant opportunity cost of receivables is 15 per cent. Current annual credit sales are ₹600 crore and current level of**

**receivables is ₹60 crore. If the credit terms are changed, the current sales are expected to change to ₹720 crore and the firm's receivables level will also increase. The firm's financial manager estimates that the new credit terms, will cause the firm's collection period to increase by 30 days.**

**Required:**

**(i) Determine the present collection period and the collection period after the proposed change in credit terms.**

**(ii) What level of receivables is implied by the new collection period?**

**(iii) Determine the increased investment in receivables, if the new credit terms are adopted.**

**(iv) Are the new credit terms desirable? (Assume 360 days in a year) [2+2+1+5]**

**Answer:**

(i) **Present collection period** = 360 days × current level receivables/Current Annual credit sales
= 360 days × ₹60 Crore/ ₹600 Crore
= 36 days

**New collection period** = 36+30
= 66 days.

(ii) **New Level of receivables** = New Sales × New Collection period/360 days
= ₹720 Crores × 66 days /360 days
= ₹132 Crores.

(iii) **Increase in investment in Receivables** = New level of receivables – Old level of Receivables
= ₹132 Crore – ₹60 Crore
= ₹72 Crore.

(iv) **Statement showing the evaluation of Credit Policies**:

| | | Present Policy [₹] | Proposed Policy [in crore] [₹] |
|---|---|---|---|
| A. | Expected Profit: | | |
| | a Credit sales | 600.00 | 720.00 |
| | b Variable Cost of credit sales | 480.00 | 576.00 |
| | c Bad debts | 18.00 | 21.60 |
| | d Expected Profit [(a) – (b) – (c)] | 102.00 | 122.40 |
| B. | Opportunity cost of Investment In receivables: | | |
| | Present – ₹480 × 36/360 × 15% | | |
| | Proposed – ₹576 × 66/360 × 15% | 7.2 | 15.84 |
| C. | Net gain [A-B] | 94.8 | 106.56 |

**3. (b) (ii) Is Share Buyback is a financing decision or an investment decision? 3**

**Answer:**

When the shares are undervalued in the market and the firm does not have an alternate business opportunity, then the excess cash is returned to shareholders and thus the management prefers to invest in its own business by buying back their shares. Yes, the management has more faith in its own business. Thus it can be argued as an investment decision even though excess cash with the firm is given to shareholders in a different form.

Secondly, share buy-back reduces the equity portion of the firm, thereby increasing the debt portion in the overall capital structure. Moreover, for further expansion the firm may borrow

thereby further increasing the leverage and risk. Thus share repurchase is a kind of financing decision too.

**3. (b) (iii) Any three differences between Funds Flow Statement and Cash Flow Statement. 3**

**Answer:**
The following are the main differences between a Funds Flow Statement and a Cash Flow Statement:-

| | Funds Flow Statement | Cash Flow Statement |
|---|---|---|
| **1.** | Funds Flow Statement reveals the change in working capital between two Balance Sheet dates | Cash Flow Statement reveals the changes in cash position between two balance sheet dates. |
| **2.** | Funds Flow Statement is based on accounting | Cash Flow Statement is based on cash basis of accounting |
| **3.** | In the case of Funds Flow Statement a schedule of changes in working capital is prepared. | No such schedule of changes in working capital is prepared for a Cash Flow Statement. |
| **4.** | Funds Flow Statement is useful in planning, Intermediate and long term financing. | Cash Flow Statement as a tool of financial analysis is more useful for short-term analysis and cash planning. |
| **5.** | Funds Flow Statement deals with all components of working capital. | Cash Flow Statement deals only with cash and cash equivalents. |
| **6.** | Funds Flow Statement reveals the sources and application of funds. The difference represents net increase or decrease in working capital. | Cash Flow Statement is prepared by taking into consideration the inflows and outflows in terms of operating, investing and financing activities. The net difference represents the net increase or decrease in cash and cash equivalents. |

**(Student may write any three difference)**

**3. (c) (i)**
**XYZ Ltd. sells its products on a gross profit of 20% of sales. The following information is extracted from its annual accounts for the year ending 31st March, 2014.**

| | ₹ |
|---|---|
| **Sales (at 3 months credit)** | **40,00,000** |
| **Raw materials** | **12,00,000** |
| **Wages (15 days in arrears)** | **9,60,000** |
| **Manufacturing expenses and general expenses (One month in arrears)** | **12,00,000** |
| **Administration expenses (one month in arrears)** | **4,80,000** |
| **Sales promotion expenses (payable half yearly in advance)** | **2,00,000** |

**The company enjoys one month credit from the suppliers and maintains 2 months stock of raw materials and 1½ months stock of finished goods. Cash balance is maintained at ₹1,00,000 as a precautionary balance. Assuming a 10% margin, find out the working capital requirement of XYZ Ltd. [9]**

**Answer:**

**Statement of working capital requirement:**

| | ₹ | ₹ |
|---|---|---|
| **Current Assets:** | | |
| Debtors (40,00,000 × 3/12 × 80%) (@ CGS) | | 8,00,000 |
| Raw material stock (12,00,000 × 2/12) | | 2,00,000 |
| Finished goods stock (1½ months of cost | | |
| Production – cost of production is 80% on 40,00,000) | | 4,00,000 |
| Advance payment of sales promotion | | 1,00,000 |
| Cash | | 1,00,000 |
| Total | | 16,00,000 |
| **(-) Current Liabilities:** | | |
| Sundry creditors (1/2 of 12,00,000) | 1,00,000 | |
| Wages (arrear for 15 days ) (1/24 of 9,60,000) | 40,000 | |
| Manufacturing and general expense | | |
| (Arrears for 1 month) (1/12 of 12,00,000) | 1,00,000 | |
| Administrative expenses (Arrears for 1 month) (1/12 of 4,80,000) | 40,000 | 2,80,000 |
| | | 13,20,000 |
| (+) 10% Margin | | 1,32,000 |
| Net working capital requirement | | 14,52,000 |

**3. (c) (ii)**

**Mishra Ltd. wants to raise ₹5,00,000 as additional capital. It has two mutually exclusive alternative financial plans. The current EBIT is ₹17,00,000 which is likely to remain unchanged. The relevant Information is -**

**Present Capital Structure: 3,00,000 Equity shares of ₹10 each and 10% Bonds of ₹20,00,000.**

| | |
|---|---|
| **Tax Rate:** | **50%** |
| **Current EBIT:** | **₹ 17,00,000** |
| **Current EPS:** | **₹ 2.50** |
| **Current Market Price:** | **₹ 25 per share** |
| **Financial Plan I:** | **20,000 Equity Shares at ₹ 25 per share.** |
| **Financial-Plan II:** | **12% Debentures of ₹ 5,00,000.** |

**What is the indifference level of EBIT?** **[7]**

**Answer:**

**Computation of EBIT - EPS Indifference Point**

| Particulars | Financial Plan 1 - Equity | Financial Plan II - Debt |
|---|---|---|
| Owner's Funds | (3,00,000 × 10 + 20,000 × 25) = ₹ 35,00,000 | 3,00,000 × 10 = ₹ 30,00,000 |
| Borrowed Funds (given) | ₹ 20,00,000 | 20,00,000 + 5,00,000 = ₹ 25,00,000 |
| Total Capital Employed | ₹ 55,00,000 | ₹ 55,00,000 |
| EBIT (let it be ₹ X) | X | X |
| Less: Interest | 20,00,000 × 10% = ₹ 2,00,000 | (20,00,000 × 10% + 5,00,000 ₹ 12%) = ₹ 2,60,000 |

| | | |
|---|---|---|
| EBT | X—2,00,000 | X—2,60,000 |
| Less: Tax at 50% | ½X-1,00,000 | ½X-1,30,000 |
| EAT | ½X-1,00,000 | ½X-1,30,000 |
| Number of Equity Shares | 3,00,000 + 20,000 = 3,20,000 | (given) 3,00,000 |
| EPS | [½X-1,00,000] ÷ 3,20,000 | [½X-1,30,000] ÷ 3,00,000 |

For indifference between the above alternatives, EPS should be equal. Hence, we have

$$\frac{\frac{1}{2}x-1,00,000}{3,00,000}=\frac{\frac{1}{2}x-1,30,000}{3,20,000}$$

On Cross Multiplication, 15X - 30 Lakhs = 16X - 41.6 Lakhs; or X = 11.6 Lakhs

Hence EBIT should be ₹ 11.60 Lakhs and at that level, EPS will be ₹ 1.50 under both alternatives.