INTERMEDIATE EXAMINATION
GROUP I
(SYLLABUS 2012)

SUGGESTED ANSWERS TO QUESTIONS
JUNE 2014

Paper- 8 : COST ACCOUNTING AND FINANCIAL MANAGEMENT

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

The figures in the margin on the right side indicate full marks.

SECTION A

Cost Accounting (60 marks)

In section A, Question No. 1 is compulsory. Answer any three out of the remaining four.

(Working notes should form part of the answers. Wherever necessary suitable assumptions may be made and disclosed by way of note)

1. Answer the following:

    (a) The annual demand for an item is 3200 units. The unit cost is ₹6 and the inventory carrying cost is 25% per annum. If the cost of one procurement is ₹150, determine the time between two consecutive orders, assuming procurement is at EOQ.   **2**

    (b) Calculate the direct expenses as per CAS-10 from the following information:
    Royalty paid on sales: ₹1,25,000; Royalty paid on production: ₹ 1,00,000; Design charges ₹ 26,000; Machine shop expenses ₹45,000; Software development charges related to production: ₹55,000;   **2**

    (c) In a certain week, the time allowed to a worker for Job X was 48 hours. He took 30 hours for the job. If the hourly effective rate of earnings of the worker under Rowan Plan is ₹ 55, find the normal hourly rate of wages.   **2**

    (d) The following information is given:
    The total number of operators working in a Department = 300.
    The number of working days per year = 300 and the number of hours per day = 8.
    The total Departmental overhead is ₹3,42,000. 5% of the total number of days is normal idle time.
    Find the overhead rate per direct labour hour.   **2**

    (e) How should packing costs be treated in Cost Accounts?   **2**

    (f) The opening stock, closing stock and purchases of materials were respectively 10,000, 16,000 and 84,000 during a production period. Compute the inventory turnover ratio.   **2**

Answer:

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1. **(a)** EOQ = $\sqrt{\dfrac{2\,A\,O}{C}} = \sqrt{\dfrac{2 \times 150 \times 3200}{6 \times 25\%}} = 800$ units

    No. of orders per year = 3200 /800 = 4.
    Time between 2 orders = 12/4 = 3 months.

    Alternative method:
    At EOQ, ordering cost = carrying cost.
    Hence, 6 x 0.25 x q/2 = 3200/q x 150.
    q^2 = 3200 x 150 x 2 / (6 x 0.25).
    q = 800
    Time between orders = 12 x 800 / 3200 = 3 months

    (b) As per CAS – 10, the direct expenses will be the sum of all the items mentioned.
    Total direct expenses = 1,25,000 + 1,00,000 + 26,000 + 45,000 + 55,000 = ₹ 3,51,000.

    (c) Let the normal wage rate be R.
    Total wages under Rowan plan = (30 x R) + [(48 – 30) x 30 / 48] x R
    41.25 R = 55 x 30 hours.
    R = 1650 / 41.25
    = 40.
    Normal wage rate = ₹ 40/hr.

    (d) No. of working hours per annum = 300 x 8 x 0.95 x 300 = 6,84,000 hours.
    Overhead Cost = ₹ 3,42,000.
    Direct labour hour rate = 3,42,000 / 6,84,000 = ₹ 0.5/hr.

    (e) Treatment of packing cost in Cost Accounts:
    Primary packing material, which is essential to put the product in a saleable condition is charged as production overhead. (e.g., ink in a bottle, jam in a jar, etc.).

    Primary packing material that is made decorative for attracting customers should be partly charged as manufacturing overhead and partly as a selling overhead (e.g., fancy bottles and covers for cosmetics/perfumes).

    Secondary packing material which is used for easier transportation – like crates for cold drink bottles, etc. should be charged as a selling and distribution overhead.

    (f) O/S + Purchases – C/S = Cost of Goods Sold.
    Cost of Goods Sold = 10,000 + 84,000 – 16,000 = ₹ 78,000.

    Average Inventory = $\dfrac{O/S + C/S}{2} = \dfrac{10,000 + 16,000}{2} =$ ₹ 13,000

    Inventory Turnover Ratio = $\dfrac{\text{Cost of Goods Sold}}{\text{Average Inventory}}$

    $= \dfrac{78,000}{13,000} = 6$ times.

2. **(a) The machine shop of a factory offers the following information about a particular machine:**
    Cost of the machine: ₹20,00,000; Salvage value: ₹ 80,000; Life of the machine: 10 years.
    Assume straight-line depreciation on net value over the life of the machine.
    Cost of repairs and maintenance- ₹28,000 per annum.
    Electric power used by the machine is 15 units per hour at ₹8.5 per unit. No power is

consumed during maintenance and set-up time. A chemical costing ₹8,250 per packet is used for operating the machine every month. The wages of the operator are ₹1,32,000 per annum. The operator devotes one third of his time to this machine. Annual insurance charges are 1% of the cost of the machine. Cost of lighting the department is ₹15,000 per month. There are 72 points of which only 12 lighting points are used by this machine. Other indirect charges chargeable to this machine are ₹13,000 per month. Annual working hour are 3000. The machine requires a set-up time of 156 hours per annum which are to be considered productive time. The machine requires 400 hours per annum for repairs and maintenance. You are required to calculate the machine hour rate. **8**

(b) A plant that manufactures tiffin boxes has an installed capacity of 1,20,000 units per year distributed evenly over each calendar month. The following is the cost structure of the product:

Raw Material	₹20 per unit
Direct Labour	₹12 per unit
Direct Expenses	₹2 per unit
Variable overheads	₹16 per unit
Fixed overhead	₹3,00,000 per annum (i.e. ₹1,50,000 per half year)

Semi-variable overheads: ₹ 7500 per month up to 50% capacity and an additional ₹2500 per month for every additional 25% capacity utilization or part thereof.

The plant will operate at 50% capacity during the first 6 months of the calendar year 2014 and at 100% capacity in the remaining months.

The selling price for the period from 1st January to 30th June was fixed at ₹ 70 per unit. The firm wishes to revise the selling price for the next half year, which should be fixed effective 1st July to achieve a total profit of ₹ 9,00,000 during 2014.

You may assume that whatever is produced is sold and that the market is likely to absorb the production after the revision in price.

You are required to prepare a statement showing the element wise total cost and profit for each half year and the revised selling price in the second half of the year to achieve the overall annual profit of ₹ 9,00,000 in 2014. Compute the semi-variable and fixed cost per unit for each of the half yearly periods. **8**

Answer:

2. (a) Computation of Machine hour rate
Running hours = 3000 – 400 = 2600

Items of Cost	Total Amount (₹)	₹/hour
Fixed charges:		
Operator's wages: 1,32,000 / 3	44,000	
Insurance = 1% x 20,00,000	20,000	
Lighting ₹15,000 p.m. x 12 months x 12 points/72 total points	30,000	
Other indirect expenses = 13,000 p.m. x 12 months	1,56,000	
Total Standing Charges	2,50,000	96.15
Indirect Expenses (Machine expenses)		
Depreciation = (20,00,000 – 80,000) / 10	1,92,000	73.85
Repairs and Maintenance	28,000	10.77
Power15 units per hour x (3000–156–400) hours x ₹8.5 per unit	3,11,610	119.85
Chemical ₹ 8250 p.m. x 12 months	99,000	38.08
Subtotal – machine expenses	6,30,610	242.55

Total machine hour rate = Fixed + Direct Expenses		338.70

(b) Variable Cost per unit = 20 + 12 + 2 + 16   = 50
Selling Price 1st half year   = 70
Contribution p.u. (January to June)   = 20

Particulars	Jan to Jun ₹	Jan to Jun ₹/Unit	Jul to Dec ₹	Jul to Dec ₹/Unit
Contribution 20 p.u. x 5000 units p.m. x 6 months	6,00,000	20		
Balancing figure (4,95,000 + 1,50,000 + 75,000)=			7,20,000	
Contribution per unit (7,20,000 / 60,000 units) =				12
Semi Variable Overheads:	45,000			
7500 p.m. x 6 months (50% capacity)				
₹ Per unit (Jan – Jun) (45,000/30,000) =		1.5		
(7500+2500+2500) p.m. x 6 months = 12,500x6 =			75,000	
₹ / unit 75,000 / 60,000				1.25
Fixed overheads	1,50,000	5	1,50,000	2.5
Profit	4,05,000			
Profit required to make total profit 9,00,000			4,95,000	

Contribution per unit required in July – December = 12.
Hence, selling price = 12 + 50 = 62 ₹ per unit should be fixed in the second half of the year.

3. **(a)** **The standard overhead rate for a department is ₹3.60 per hour and the overhead allowances are as follows:**

Activity level (hours)	Budgeted overhead allowances (₹)
3000	14,000
7000	22,000
11000	30,000

Calculate the standard activity level at which the standard overhead rate has been work out. **4**

(b) **P. Ltd., a manufacturing company, made the following purchases of raw materials from different suppliers. Information pertaining to each material is given below:**

Material	Quantity as per invoice	Rate ** per unit	Other information
A	2000 kg	₹12	VAT 4%; Quantity discounts 2%; Cash discount for payment within 30 days = 5% Delivered to store at supplier's cost.
B	3000 kg	₹20	No VAT; Normal loss = 6% of the quantity during transport. Insurance ₹6000; Freight ₹ 2 per kg.
C	1000 nos	45 US$	Imported from US. Import duty 24% of invoice value. Insurance and freight at supplier's cost. Exchange rate at purchase date = ₹ 60 per US $ Exchange rate at payment date = ₹ 63 per US $

D	4000 kg	₹30	No VAT; No insurance. Normal loss 3% of the quantity accepted. Abnormal loss 2% reimbursed by transporter to the extent of ₹1500
** rate means rate as per supplier's price list before any discount or taxes.			

Applying the cost Accounting Standards for material cost, calculate the value and quantity at which each material receipt will be recorded. **9**

(c) Name 3 factors that should be disclosed in the cost statements as per CAS-3. **3**

Answer:

3. (a) Difference in activity levels = 4000 hours.
Difference in overhead amounts = ₹ 8000
Variable overhead = 8000 / 4000 =₹ 2 per unit.
Fixed overheads = 14000 – 3000 x 2 = ₹ 8000
Or   22000 – 7000 x 2 = ₹ 8000
Or   30000 – 11000 x 2 = ₹ 8000
Standard rate = 3.6.
Fixed part = 3.6 – 2 = 1.6 per hour.
1.6 x No. of hours = ₹ 8000.
No. of hours = ₹ 8000 / 1.6 per hour = 5000 hours. = Standard activity level

(b)

Material	Quantity to be Recorded as receipt	Value ₹	Remarks
A	2000 Kgs.	24,460.80	12 x 0.98 x 2000 = 23,520 Add: VAT 4% = 940.80 Cash discount is not reflected in material cost. It is taken to the credit of P & L A/c.
B	2820 Kgs.	72,000.00	3000 x 20 = 60,000 Insurance = 6000 Freight = 2 x 3000 = 6000
C	1000 Nos.	33,48,000.00	45 x 1000 x 60 = 27,00,000 Import duty 24% = 6,48,000 Exchange fluctuation due to different payment date not reflected in material cost.
D	3800 Kgs.	1,17,600.00	4000 x 30 = 1,20,000 Normal Loss 3% (120) Value of 3880 Kg = 1,20,000. Abnormal loss 80 Kg. (2400 – 1500 recovered from transporter taken to P & L A/c)

(c) CAS – 3 relates to principles and methods of determining overheads.
The following factors are to be disclosed:
(i)   The basis of assignment of overheads to cost objects.
(ii) Overhead incurred in foreign exchange.
(iii) Overheads relating to resources received from or supplied to related parties.
(iv) Any subsidy / grant / incentive or any amount of similar nature received / receivable reduced from overhead.
(v) Credits / recoveries relating to overheads.

(vi) Any abnormal Cost not forming part of the overheads.

(vii) Any unabsorbed overheads.

(Students can write any three points).

4. (a) The standard capacity usage and the actual capacity utilization in respect of a machine for a particular month are 90% of total available hours and 80% of standard capacity usage respectively. The total available working time in the month is 200 hours. The following data is obtained from the idle time card:

Time in waiting for material (normal) =	10 hours
Time in waiting for tools (normal) =	6 hours
Sudden break down =	10 hours

The hourly fixed cost of the machine is ₹43 and the operator is paid at ₹70 per hour. You are required to report the idle time cost to the management. 8

(b) Briefly explain the following: 8
(i) Practical capacity
(ii) Normal Capacity
(iii) Idle Capacity
(iv) Excess Capacity

Answer:

4. (a) Total available hours = 200

Standard capacity usage = 90% = 200 x 90% = 180 hours.

Unavoidable idle time = 20 hours

Actual capacity utilization = 80% of standard = 0.80 x 180 = 144 hours.

Avoidable idle time = 180 – 144 = 36.

Hourly idle time cost = 43 + 70 = 113

Idle Time Report to Management

Unavoidable idle time	20 hours	Cost = 20 x 113 = ₹ 2,260	Merged in the standing order number or production order of the worker, i.e., treated direct labour cost.
Avoidable Idle time			
Normal idle time:			
Waiting time for materials	10 hours	10 x 113 = ₹ 1,130	Booked under factory overheads
Waiting time for tools	6 hours	6 x 113 = ₹ 678	Booked under factory overheads
Abnormal idle time:			
Sudden break-down	10 hours	10 x 113 = ₹ 1,130	Adjusted through the costing P & L A/c; Not charged to production
Concealed idle time	10 hours	10 x 113 = ₹ 1,130	Treated as overhead costs
Total Avoidable idle time		₹ 4,068	

(b) (i) Practical capacity:

The maximum plant capacity at which the plant is designed less the allowance given for unavoidable interruptions like time lost for repairs, inefficiencies, breakdown, shortages in raw materials, labour supplies, Sundays, holidays, vacation, etc. These unavoidable influences are mostly on internal causes and do not consider main external causes like lack of customers. Practical capacity is determined with reference to the nature of the industry and the circumstances in which the particular factory is situated. Usually practical capacity ranges between 75 to 85% of the maximum capacity.

(ii) Normal Capacity:

Idle capacity due to long term sales trend, evened out for cyclical fluctuations is reduced from the practical capacity to arrive at the normal capacity. It is determined for the business as a whole and then broken down by plants and departments. Normal capacity is used for preparation of flexible budgets, establishing overhead rates, fixing standards for standard costing, pricing, scheduling production, BEP, Cost control and controlling inventory cost.

(iii) Idle Capacity:

Idle capacity is normal capacity less allowances for temporary lack of orders, bottlenecks, machine break-down, etc. This represents productive potential not utilized due to avoidable, regular interruptions. Idle capacity represents the difference between the practical capacity and the actual capacity and represents the unused productive potential.

(iv) Excess Capacity:

Excess capacity refers to that portion of the practical capacity that is available, but no attempt is made to utilize it due to strategic or other reasons. It either results from a managerial decision to retain larger production capacity or from unbalanced equipment or machinery within departments. Excess capacity is excluded from overhead rate consideration.

5. (a) **The following information pertains to a production department of a manufacturing company:**

Particulars	₹	₹ Per hour
Indirect wages		**40**
Repairs: up to 2000 hours	10,000	
For each additional 500 hours up to a total of 4000 hours	3,500	
Additional amount for 4001 to 5000 hours	6,000	
Additional amount beyond 5000 hours	7,000	
Rent and Rates	35,000	
Power: up to 3,600 hours		25
Above 3600 hours		30
Consumable supplies		24
Depreciation up to 100% of budgeted activity. Beyond this level, 10% increase for every 10% increase in activity or part thereof.	65,000	
Cleaning and Lighting **Up to 4000 hours** **Above 4000 hours**	18,000 23,000	

The budgeted level of activity is 5,000 hours in a production period.

Prepare the overhead budget with the break-up of each item of cost given above for activity levels at 70% and 110% of the budgeted volume. Compare the budgeted overhead rate per hour and the overhead rates per hour at the above levels. Comment on these rates. **8**

(b) **200 kg of a certain material valued at ₹ 50 per kg were issued from the Stores Department to the Production Department, During transit, 2 kg physically disappeared due to shrinkage (1% shrinkage is considered normal). In the production process, the yield of good output was 80% of the input. 8% of the input had a slightly sub standard dimension and this can be sold as seconds in the market at a discount of 25% of the selling price of good output, which is ₹ 300**

per kg. 12% of the input emerged as trimmings in the process. This was collected and can be sold in the market at a net price of ₹20 per kg, which is credited to the manufacturing overhead as per the company's practice.

Explain with reasons, the quantities that you will classify as (i) waste, (ii) scrap and (iii) spoilage.

What will be the material cost per unit of the good output? (A simply computed value will suffice. A detailed statement is not required) **8**

Answer:

5. (a) Fixed and Flexible Budget showing overhead cost per hour

Item of overhead	Budgeted Level 5000 hours	70% level 3500 hours	110% level 5500 hours
Indirect Wages	2,00,000	1,40,000	2,20,000
Repairs	30,000	20,500	37,000
Rent and Rates	35,000	35,000	35,000
Power	1,32,000	87,500	1,47,000
Consumable supplies	1,20,000	84,000	1,32,000
Depreciation	65,000	65,000	71,500
Cleaning and Lighting	23,000	18,000	23,000
Total	6,05,000	4,50,000	6,65,500
Overhead rate per hour	121.00	128.57	121.00

The overhead rates are fixed at a reasonable level. There is not likely to be any significant under or over absorption to have a supplementary rate.

(b)

Quantity	Classification	Reason
2 Kgs.	Waste	Material disappears due to shrinkage or evaporation resulting in lower output quantity. This is invisible waste. Cost of normal waste is absorbed by the quantity of output.
23.76 Kgs.	Scrap	Incidental material residue coming out of a production process. Scrap is physically available and has low measurable utility or market value. E.g. trimmings, shavings, saw dust, etc. The net realizable value is credited to manufacturing overhead or to the job or directly to the P & L A/c.
15.84 Kgs.	Spoilage	When production does not come up to the standard of the specification and cannot be made good by rectification or reconditioning, they are sold as seconds at a slightly or significantly low price. This is called spoilage. Spoilage involves material, labour and overhead cost.

Material cost per unit of good output = 10,000 /(200-2-23.76-15.84) = 10,000 / 158.4 = 63.13 per unit.

SECTION B - Financial Management (40 marks)

In Section B, Question No. 6 is compulsory. Answer any two out of the remaining three.

6. Answer the following, showing the workings for each. (No credit will be given for answers without the reasoning)

(a) X deposits ₹1,00,000 at the beginning of each of years 1 and 3, and ₹ 1,00,000 at the end of each of the years 2, 4 and 5. Find the discounted value of the investments at the end of year 3 with a discount rate of 10%.

(P.V. factor of 10% at the year end 0, 1, 2, 3, 4, 5 and 6 are respectively: 1, 0.909, 0.826, 0.751, 0.683, 0.621, 0.564) **2**

(b) Cost of debt is 9% after tax. Cost of equity is 12% at zero leverage and it keeps increasing as leverage grows. Find the weighted average cost of capital at 60% debt proportion under the Net Operating Income Approach. **2**

(c) The earnings of a company = ₹5,00,000. Dividend payout ratio is 60%. The number of shares outstanding = 1,50,000. Equity capitalization rate =11% and rate of return on investment =16%. Calculate the market value of the share as per Walter's model. **2**

(d) Will the following items feature in the cash flow statements as per AS-3? If so, state the category under which the item will be shown.
   (i)   Cash paid to develop self constructed fixed asset.
   (ii) Acquisition of another entity by issue of shares.
   (iii) Conversion of debt to equity. **2**

Answer:

6. (a)

End of year	Amount invested	Factor at end of year 3
0	1,00,000	$(1.1)^3 = 1.331$
1		
2	2,00,000	$(1.1)^1 = 1.1$
3		
4	1,00,000	$1/(1.1) = 0.909$
5	1,00,000	$1/(1.1)^2 = 0.826$

= 1,00,000 (1.331+0.909+0.826) + 2,00,000 (1.1)
= 5,26,600

(b) According to NOI approach, the WACC does not get affected by the financing mix. The Cost of equity at zero leverage will be the WACC = 12% always, however, much the leverage changes.

(c) At per Walter's model,
P = [D + (E – D) (r/k$_e$)/k$_e$
   = [2+(3.33-2) (0.16/0.11)/0.11) = [2 + 1.33 x 1.45] /0.11 = 3.9285 / 0.11 = 35.71 ₹

(d) (i)   Cash paid to develop self constructed asset - Included as 'cash from investing activity' under AS – 3.
   (ii) Acquisition of another entity by issue of shares – Non cash transaction. Hence, does not feature in the Cash flow statement as per AS – 3.
   (iii) Conversion of debt to equity – Non cash transaction. Hence, does not feature in the Cash flow statement as per AS – 3.

7. (a) The following details relating to a company are given:

Sales per annum	1,00,000 units
Variable Cost	₹ 90 per unit
Fixed Cost including interest per annum	₹18,00,000
P/V ratio	25%

10% Debentures	₹ 30,00,000
Equity Share capital (shares of ₹ 10 each)	₹ 40,00,000
Corporate Tax Rate	30%

Calculate:
(i) Operating Leverage
(ii) Financial Leverage
(iii) Combined Leverage
(iv) Earnings per share   **8**

(b) Write short note on Global Depository Receipts.   **4**
(c) A chemical company has a net sales of ₹50 crores, cash expenses (including taxes) of ₹35 crores, and depreciation of ₹5 crores. If debtors decrease over the period by ₹ 6 crores, what will be the cash from operations?   **2**
(d) The balances of the Plant and M/c of A Ltd., on 31.03.2014 and 31.03.2013 were respectively ₹1,00,000 and ₹ 40,000. A machine with opening w. d. v. ₹6000 was sold for ₹5000 during the year 2013-14. Depreciation of ₹ 5,000 was charged during the year. Find the amount that will feature as 'application of funds' in the Fund Flow Statement.   **2**

Answer:

7. (a) Selling Price = $\dfrac{V.C. \text{ per unit}}{1 - P/V \text{ ratio}}$

= ₹ 90/(1 – 0.25)
= 90 / 0.75
= ₹ 120 per unit

Fixed cost other than interest:
= ₹ 18,00,000 – 10% of ₹ 30,00,000
= 18,00,000 – 3,00,000
= ₹ 15,00,000

Income Statement

Sales: 1,00,000 @ ₹ 120 per unit	1,20,00,000
Less: Variable cost @ ₹ 90 per unit	90,00,000
Contribution	30,00,000
Less: Fixed Cost other than interest	15,00,000
EBIT	15,00,000
Less: Interest	3,00,000
EBT	12,00,000
Less: Tax @ 30%	3,60,000
EAT	8,40,000

(i)   Operating Leverage   = Contribution / EBIT
= ₹ 30,00,000 / ₹ 15,00,000
= 2

(ii) Financial Leverage   = EBIT / EBT
= ₹ 15,00,000 / ₹ 12,00,000
= 1.25

(iii) Combined Leverage   = Contribution / EBT

$= ₹ 30,00,000 / ₹ 12,00,000$
$= 2.5$

Or
Combined Leverage $= OL \times FL$
$= 2 \times 1.25$
$= 2.5$

(iv) Earning Per Share (EPS) $= EAT / \text{No. of Shares}$
$= ₹ 8,40,000 / ₹ 4,00,000$
$= ₹ 2.10 \text{ per share}$

(b) 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.

It is denominated in US dollars and represents shares issued in local currency.

Characteristics:
(i) The shares underlying the GDR do not carry voting rights.
(ii) The instruments are freely traded in the international market
(iii) Investors can earn fixed income by way of dividend.
(iv) GDRs can be converted into underlying shares, depository / custodian banks reducing the issue.

(c) Cash from operation = operating profit + noncash charges + decrease in debtors = ₹ [(50-35-5) + 5 + 6] crores = ₹ 21 crores.

(d)

Plant and Machinery A/c as on 31st March 2014

Particulars	₹	Particulars	₹
To Balance b/d	40,000	By Bank – Sale proceeds	5,000
To bank – Purchases (Bal. fig.)	71,000	By P&L – Loss	1,000
		By Depreciation	5,000
		By Balance C/F	1,00,000
Total	1,11,000	Total	1,11,000

Amount shown as Application of Funds is ₹ 71,000/-

8. (a) The following information relates to N Ltd. for the year ending 31.03.2014:

Fixed Assets to sales ratio	**2:1**
Current ratio	**2.5:1**
Liquidity ratio	**1.4:1**
Debtors' turnover	**12 times**
Debt (long-term) – equity ratio	**1:2**
Current assets to fixed assets ratio	**1:3**
Working capital	**₹15,00,000**

Assume all sales are on credit.

Calculate the following:
(i)   Current Assets
(ii)   Total Assets
(iii)   Sales

  (iv) Debtors
  (v) Inventory
  (vi) Networth
  (vii) Long-term debt
  (viii) Cash and Bank balance   **8**

(b) Information on two projects is given below:

Project	A	B
Cash Inflows (₹ '000) year-end		
1	50	282
2	300	250
3	360	180
4	208	Nil
Initial Investment - beginning of year 1	535	540

Evaluate which project is better under each of the following criteria taking discount rate as 10% p.a.
  (i) NPV
  (ii) Discounted Pay Back period
  (iii) Profitability Index
(Discount factors given in question 6)   **8**

Answer:

8. (a) (i) Current Assets:
    Current ratio = Current Assets / Current Liabilities = 2.5 : 1
    Current Liabilities = Working Capital / (2.5 – 1) = 15,00,000 / 1.5 = ₹ 10,00,000.
    Current Assets = Current Liabilities x 2.5 = ₹ 25,00,000.

   (ii) Total Assets:
    Fixed Assets = current assets x 3 = 25,00,000 x 3 = ₹ 75,00,000
    Total Assets = Fixed Assets + Current Assets = 75,00,000 + 25,00,000 = ₹ 1,00,00,000.

   (iii) Sales = Fixed Assets x 2 = 75,00,000 x 2 = ₹ 1,50,00,000

   (iv) Debtors = Credit sales / Debtors turnover = 1,50,00,000 / 12 = ₹ 12,50,000

   (v) Inventory:
    Liquidity ratio: Liquid Assets i.e. (Debtors + Cash and Bank)/Current Liabilities = 1.4:1
    Liquid assets = C.L x 1.4 = ₹ 14,00,000
    Inventory = Current assets – Liquid assets = 25,00,000 – 14,00,000 = ₹ 11,00,000.

   (vi) Net Worth or Shareholders Fund:
    Debt + Net worth = Total Assets – Current Liabilities = 1,00,00,000 – 10,00,000 = ₹ 90,00,000
    Debt Equity ratio = 1 : 2
    Net worth (Equity) = (Debt + Net worth) x 2/3 = 90,00,000 x 2/3 = ₹ 60,00,000

   (vii)Long term Debt = Net worth/2 = 60,00,000 / 2 = ₹ 30,00,000

   (viii)Cash and Bank Balance = Liquid Assets – Debtors = 14,00,000 – 12,50,000 = ₹ 1,50,000.

  (b)

	Project A			Project B				
Cash inflows								
End of year	Inflows ₹ '000			Inflows ₹ '000				
0	Absolute	Discounted	Cumulative	Absolute	Discounted	Cumulative	Discount factor	Decision
1	50	45.45	45.45	282	256.34	256.34	0.909	
2	300	247.80	293.25	250	206.50	462.84	0.826	
3	360	270.36	563.61	180	135.18	598.02	0.751	
4	208	142.06	705.67	Nil		598.02	0.683	
Total Discounted inflows ₹ '000		705.67			598.02			
Total Discounted inflows ₹ '000		535			540			
NPV		170.67			58.02			A is better
Fraction of 3rd year	241.75	X 12 =	10.73		77.162	X 12 =	6.85	
	270.36				135.18			
Pay back	2 years and 10.73 months				2 years and 6.85 months			B is better
Profitability index	705.674	=1.32		598.018	=1.11			A is better
	535			540				

9. (a) **Z Ltd's cost sheet gives you the following information:**

Items of Cost/Revenue	₹/unit
Raw Material Cost	**117**
Direct Labour	**49**
Factory Overheads (includes depreciation at ₹ 18 per unit at budgeted level of activity)	**98**
Total Cost per unit	**264**
Profit	**36**
Selling Price per unit	**300**

The following information is also available:

Average raw material in stock	**4 weeks**
Average Work-in-progress stock (Material 80% complete, Labour and overheads - 60% complete)	**2 weeks**
Credit period allowed to debtors	**6 weeks**
Credit availed from suppliers	**8 weeks**
Time lag in payment of wages	**1 week**
Time lag in payment of overheads	**2 weeks**

The company sells one-fifth of its output against cash and the remaining is credit sale. Cash balance is maintained at ₹ 2,50,000. Budgeted level of activity is 78,000 units. Production, wages and overheads may be taken as being carried out evenly throughout the year. Debtors may be valued at sales value.

Prepare a statement showing the item wise breakup of the total working capital requirement needed to finance the budgeted level of activity. **8**

(b) **Answer any two of the following:**
   (i) Write a short note on the theory of net income approach relating to capital structure. **4**
   (ii) What are the distinctive features of a financial lease and an operating lease? **4**
   (iii) What is debt-service coverage ratio? Explain its significance. **4**

Answer:

9. (a)

	Stock	WIP	Finished Goods	Debtors	Cash balance	Total	Creditors	Net WC
Budget production	78000 units p.a.							
No. of weeks	52 p.a.							
Budgeted production	1500 units per week							
Raw Material	702000	280800	526500	842400		2351700	1404000	947700
Direct Labour		88200	220500	352800		661500	73500	588000
Overheads (Cash)		144000	360000	576000		1080000	240000	840000
Non Cash Exp/profit				388800		388800		388800
Cash Balance					250000	250000		250000
Total	702000	513000	1107000	2160000	250000	4732000	1717500	3014500

Statement of Working Capital Requirement

Current Assets:	
Raw Material Inventory	702000
WIP Inventory	513000
Finished Goods Inventory	1107000
Sub total-Inventory	2322000
Sundry debtors	2160000
Cash	250000
Current Assets total	4732000
Less:	
Creditors for purchases	1404000
Wages payable	73500
Overhead payable	240000
Sub total-current liability	1717500
Working Capital = CA - CL	3014500

Note : In the absence of information it is assumed that Finished Goods was in stock for 3 weeks.

(b) (i) Net Income Approach on Capital Structure:
The capital structure has relevance, i.e., a firm can increase its value and minimize the overall cost of capital by employing debt capital in its capital structure. The greater the debt, the lower shall be the overall cost of capital and therefore the greater shall be the value of the firm.

This theory assumes that:
(i) Cost of debt is less than cost of equity.
(ii) The risk perception of investors is not affected by use of debt. Therefore, the equity capitalisation rate k_e and debt capitalization rate k_d don't change with leverage.
(iii) There are no corporate taxes.

$V = S + D.$
S = market value of equity = NI / K_e
K_o = overall cost of capital = $EBIT / V$

(ii) Leasing is an arrangement that provides a firm with the use and control over assets without buying and owning them.

Operating Lease	Financial Lease
Short term. The lease period is usually less than the life of the asset.	Usually long term. Lease period almost coincides with the useful life of the asset.
The Present value may not match the cost of the asset. The lessor may have	The Present value of the lease rentals usually exceeds or atleast is substantially

to again lease it out to the same or another party.	equal to the whole of the cost of the asset.
Usually cancellable at short notice.	Not normally cancellable at short notice.
Lessee generally has the option of renewal. Otherwise another party takes the asset on a fresh lease since the useful life is normally not over.	Usually provides the lessee the option of renewal.
Lessor is generally responsible for insurance, maintenance and taxes.	Lessee is generally responsible for insurance, taxes and maintenance.
Common to equipments requiring expert technical staff. The lessors normally limit their purchases to many equipments of the same type to ensure cost effective maintenance.	Common to assets like land, building, machinery, fixed equipments. Lessor has a wider variety of assets since he does not use technical experts to maintain.

(iii) Debt service coverage ratio indicates whether the business profits are sufficient to pay up the interest and the principal due to be paid.

It helps the lender to assess the borrower's ability to pay on time the installment, consisting of interest and principal.

A ratio of 2 is considered satisfactory. The greater this ratio, the better the repayment ability.

Debt Service Coverage ratio = $\dfrac{\text{PAT} + \text{Depreciation} + \text{Interest on Loan}}{\text{Interest on Loan} + \text{Loan repayment in a year}}$