

PAPER – 8: COST ACCOUNTING & FINANCIAL MANAGEMENT

Answer to PTP_Intermediate_Syllabus 2012_Jun2015_Set 3

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 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 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
		Identify	Recognize, establish or select after consideration
		Illustrate	Use an example to describe or explain something
	APPLICATION 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
	ANALYSIS How you are expected to analyse the detail of what you have learned	Tabulate	Arrange in a table
		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	

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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) If the ordering cost per order is ₹ 50, carrying cost is 10% of average inventory value, purchase cost is ₹ 25 per unit and economic order quantity (EOQ) for the product is 1000 units; Calculate the expected annual demand for the product.

Answer:

A=Annual demand of the product

O=Ordering cost

C=Carrying cost

$$EOQ = \sqrt{\frac{2AO}{C}}$$

$$\Rightarrow 1000 = \sqrt{\frac{2 \times A \times 50}{1}}$$

$$\Rightarrow A = 10,000 \text{ Units}$$

- (b) In a workshop the normal working hours is 8 hours for which ₹450 is paid as wages. However, calculation of wages payable is made on piece rate basis that 30 pieces will be produced per hour. When a worker produces below standard, 90% of the piece rate is paid but when he produces above standard, 110% of piece rate is paid. On a particular day, a worker produces 260 pieces in the allotted time of 8 hours. Calculate his earning.

Answer:

Normal price rate = 450/240 = 1.875.

Standard Production = 8hrs x 30 pieces = 240 pieces

260 pieces in 8 hours is above standard of 240 pieces.

Hence, wages = 110 % x 1.875 x 260 = 536.25 or 536.

- (c) Draw a specimen bin card and appropriately record the following transactions. 01-04-2015 Received from Supplier SW, 80 kg material A, Purchase Price ₹20 per kg. 04-04-2015 Issued to assembly 50 kg. of A at ₹15 per kg vide requisition No. 313.

Answer:

BIN CARD							
Bin No. :						Maximum Level:	
Material Code No. : A						Minimum Level:	
Material Description :						Re- order Level:	
Stores Ledger Folio No :							
Unit : Kg.							
Receipts			Issues			Balance Quantity	Remarks
Date	G.R.N. No.	Quantity	Date	S.R. No.	Quantity		
01.04.2015	-	80				80	
			04.04.2015	313	50	30	

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Note:

Full form of G.R.N. No. = Goods Received Note Number.

Full form of S.R.N No. = Store Received Note Number.

(d) State the treatment of Bad Debts in Cost record.

Answer:

We know bad debt refer to customers who do not pay money after having purchased the product. This situation arises after the sale is done. Many experts say that bad debt is not an item of expense but it's a financial loss and thus should be excluded for the purpose of costing. However normal bad debts may be considered as selling expense and included in the cost. An exceptional case like bankruptcy of a big institution may be excluded from the cost.

(e) Royalty paid on sale ₹20,000, Royalty paid on units produced ₹15,000, hire charges of equipment used for production ₹4,000, Design charges ₹15,000, Software development charges related to production ₹20,000. Compute the direct expenses as per CAS10.

Answer:

Computation of Direct Expenses as per Cas10

	Particulars	Amount (₹)
	Royalty paid on sale	20,000
Add	Royalty paid on units produces	15,000
Add	Hire Charges of equipment used for production	4,000
Add	Design Charges	15,000
Add	Software development charges related to production	20,000
	Direct Expenses	74,000

(f) List the sources of collection of Overhead.

Answer:

The following are the source documents for collection of Overheads:-

- Stores Requisition
- Wages Sheet
- Cash Book
- Purchase Order and Invoices
- Journal Entries
- Other Registers and Records

(g) With the help of following information calculate the Fixed Assets and Total Equity.

Equity Share Capital	₹2,00,000
The relevant ratios are as follows:	
Total debt to owner's equity	60%
Fixed assets to owner's equity	50%

Answer:

$$\begin{aligned}\text{Fixed assets} &= 0.50 \times \text{Owner's equity} \\ &= 0.50 \times ₹2,00,000 \\ &= ₹100,000\end{aligned}$$

$$\begin{aligned}\text{Total debt} &= 0.60 \times \text{Owner's equity} \\ &= 0.60 \times ₹2,00,000 \\ &= ₹1,20,000\end{aligned}$$

$$\begin{aligned}\text{Total Equity} &= \text{Total debt} + \text{Owner's equity} \\ &= ₹1,20,000 + ₹2,00,000 \\ &= ₹3,20,000\end{aligned}$$

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- (h) Perpetual 15% debentures of ₹1,000 are sold at a premium of 10% with no floatation costs. Taking corporate tax rate at 35%. Then calculate the after-tax cost of capital.

Answer:

$$\begin{aligned} \text{After-tax cost of capital (K}_d) &= [\text{Interest payment} / \text{Sale price of Debenture}] \times [1 - t]; \\ &= [150 \times (1 - 0.35) / (1,000 + 100)] \times 100 = 8.86\%. \end{aligned}$$

- (i) The current market price of an equity share of a company is ₹ 90. The current dividend per share is ₹ 5.00. In case the dividends are expected to grow at the rate of 10%, then calculate the cost of equity capital.

Answer:

K_e = Cost of equity capital

D_1 = Expected dividend per share

NP = Net proceeds of per share (Issue price - flotation Cost)

g = growth in expected dividend

$$K_e = D_1 / NP + g$$

$$K_e = 5.00 / 90 + 0.10$$

$$K_e = 0.056 + 0.10 = 0.156 = 15.60\%$$

Note: Here market price is taken as net proceed (NP). Here there is no under writing expenses so full amount that is ₹ 90 will be taken.

- (j) Ascertain the compound interest of an amount of ₹90,000 at 6% compounded semi annually for 3 years.

Answer:

Amount invested = ₹90,000

Rate of interest = 6%

No. of Compounds = $2 \times 3 = 6$ times

Rate of interest for half year = $6 / 2 = 3\%$

Compound value = $P(1+i)^n$

Where,

P = Principle Amount

I = Rate of Interest (in the given case half year interest)

n = No. of years (no. of compounds)

$$= 90,000(1+3\%)^6$$

$$= 90,000 \times 1.1940$$

$$= ₹1,07,460$$

Compound Interest = Compound Value – Principle Amount

$$= ₹1,07,460 - ₹90,000$$

$$= ₹17,460$$

2. (Answer any three questions)

[3×16=48]

(a)

- (i) ABC Limited uses a small casting in one of its finished products. The castings are purchased from a foundry. ABC Limited purchases 54,000 casting per year at a cost of ₹800 per casting.

The castings are used evenly throughout the year in production process on a 360 day per year basis. The company estimates that it costs ₹9,000 to place a single purchase order and about ₹300 to carry one casting in inventory for a year. The carrying costs result from

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the need to keep the castings in carefully controlled temperature and humidity conditions, and from the high cost of insurance.

Delivery from the foundry generally takes 6 days, but it can take as much as 10 days. The days of delivery time and percentage of their occurrence are shown in the following table-

Delivery Time (days)	6	7	8	9	10
Percentage of occurrence	75	10	5	5	5

- I. Compute the Economic Order Quantity.
- II. Assume that the company is willing to take a 15% risk of being out of a stock. Calculate the safety stock and the Re-Order point.
- III. Assume that the company is willing to take a 5% risk of being out of stock. Calculate the safety stock and Re-Order point.
- IV. Refer to the original data. Assume that using process re-engineering the company reduces its cost of placing a purchase of order to only ₹600. In addition, the company estimates that when the waste and in efficiency caused by inventories are considered, the true cost of carrying a unit in stock is ₹720 per year. (a) Compute new EOQ and (b) How frequently would the company be placing an order, as compared to the old purchasing policy? [2+2+2+4=10]

Answer:

- I. $EOQ = \sqrt{2AB \div C}$, Where,
 A=Annual Requirement of materials= 54,000 castings
 B= Buying cost per order= ₹9,000 per order
 C=Carrying cost p.u. p.a.= ₹300 per unit per annum.
 On substitution, $EOQ=1,800$ castings

II.

Average Consumption per day	=54,000 castings÷360 days	=150 castings
Average lead time	= $(10+6) \div 2$	=8 days
For 15% stock-out risk , relevant delivery time (Cumulative percentage of occurrence up to 7 days is 75 + 10 = 85%. Hence, risk of stock-out is 15%)		=7 days
Hence Safety stock	=7days consumption=7x150	=1,050 Castings

Re-order point	=safety stock+ Lead time consumption	=1,050+(150x 8)	2,250 Castings
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III.

For 5% stock-out risk, relevant delivery time	= 9 days
(Cumulative % of occurrence up to 9 days is 75+10+5+5=95%. Hence, risk of stock-out is 5%)	
Hence, Safety Stock	= 9 days consumption = 9 x 150
	=1,350 castings

Re-order point	=Safety Stock+ Lead time consumption	=1,350+(150x8)	=2,550 castings
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- IV. $EOQ = \sqrt{2AB \div C}$, Where,
 A=Annual Requirement of Raw Materials= 54,000 castings.
 B=Buying Cost per order = ₹600 per order.
 C=Carrying Cost p.u. p.a.= ₹720 per unit per annum.

On substitution, **EOQ=300 castings.**

Number of orders p.a.	=54,000÷1,800	=30 orders(old)	And 54,000÷300	=180 orders(new)
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The Company should be placing an order every alternative day ($360 \div 180$) i.e. once in two days under the new system, whereas it was making an order once in 12 days earlier. ($360 \div 30$)

- (ii) The capacity usage ratio and the capacity utilization ratio in respect of a machine for a particular month is 80% and 90% respectively. The available working- hours in a month is 200 hours.

The break-up of idle time is as follows:

Waiting for job	5 hours
Breakdown	4 hours
Waiting for tools	3 hours

Calculate the idle time cost and present the same in a tabular form when the hourly fixed cost of running the machine is ₹8.00. [3]

Answer:

Total available working hours = 200
 Capacity Usage Ratio = 80%
 Standard capacity expected = 80% of 200 hrs = 160 hrs
 Therefore unavoidable time = $200 - 160 = 40$ hours
 Actual hours worked = 90% of 160 hours = 144 hours
 Idle capacity or Unutilized Capacity = $160 - 144 = 16$ hours
 Idle time records reveal the following:
 Waiting for job = 5 hours
 Breakdown = 4 hours
 Waiting for tools = 3 hours
 12 hours

Avoidable idle time = $(16 - 12) = 4$ hours

Idle Time Report

Unavoidable Idle Time facilities	Time	Amount (₹)
	40	@ ₹8 = ₹320
Avoidable Idle Time facilities	Time	Amount (₹)
		@ ₹8 per hours
Waiting for job	5	₹40
Breakdown	4	32
Waiting for tools	3	24
Idle facilities	4	32
	16	128
		₹448

- (iii) The time taken for a particular operation for operator X in the process division of a manufacturing concern on three different counts was 24, 22 and 27 minutes while that of operator Y was 20, 23, and 26 minutes. It has been ascertained that the rating of X is 70/60 and that of Y is 55/60. Allowance for fatigue, personal needs are assumed at 15%. Calculate, using the above information as a base, for that particular operation:

- I. The standard time, and
- II. The time allowed under an incentive allowance of 30% of standard time. [3]

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Answer:

	Time taken (Minutes)	Rating	Normal time (Minutes)
Operator X	24	70/60	28.00
	22	70/60	25.67
	27	70/60	31.50
	73		85.17
Operator Y	20	55/60	18.33
	23	55/60	21.08
	26	55/60	23.84
	69		63.25
Total time taken by X and Y			148.42
Average normal time (148.42 ÷ 6)			24.737
Add: 15% allowance for fatigue			3.711
I. Standard time			28.448
Add: 30% incentive allowance			8.534
II. Time allowed			36.982

(b)

- (i) The following is an extract of stores ledger of a particular item of stock with incomplete information for March 2015. You are required to fill in the rate column of issues correct to two decimal places. Also fill in the values under the 'Balance column' wherever indicated with a "?". Identify the method of stock issue followed by the company. How would you treat the value of the shortages on 30th March in Cost Accounts?

Date	Receipts		Issues		Balance	
	Quantity (Kg)	Rate (₹/Kg)	Quantity (Kg)	Rate (₹/Kg)	Quantity (Kg)	Value (₹)
1					50,000	1,25,000
7	5,000	2.4				
10			30,000			62,000
15			20,000			
20	15,000	2.6				
25	10,000	2.5				
29			20,000			
30 shortage-abnormal loss			200			?
30 shortage-abnormal loss			400			?
31					9,400	?

[8]

Answer:

Statement showing the value of closing stock

Date	Receipts		Issues		Balance	
	Quantity (kg)	Rate (₹/kg)	Quantity (kg)	Rate (₹/kg)	Quantity (kg)	Value ₹
March 2015						

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1					50,000	1,25,000
7	5,000	2.4			55,000	1,37,000
10			30,000	2.50	25,000	62,000
15			20,000	2.50	5,000	12,000
20	15,000	2.6			20,000	51,000
25	10,000	2.5			30,000	76,000
29			20,000	2.55	10,000	25,000
30 (Shortage-Normal loss)			200	2.50	9,800	24,500
30 (shortage - abnormal loss)			400	2.50	9,400	23,500
31					9,400	23,500

Working Note:

- The store ledger shows the value of the stock on 10.03.15 is ₹62,000 which show that the store ledger is maintained in FIFO method.
- On 29.03.15 the issue price is :

Quantity	Rate	Value (₹)
5,000	2.40	12,000
Therefore, rate of the issue : $51,000 / 20,000 = 2.55$ [1 mark]	2.55	39,000
20,000	-	51,000

Therefore, rate of the issue: $51,000 / 20,000 = 2.55$

- Normal Shortage is charged to production as a % of direct material consumed.
The value of normal loss to be included in material cost = $200 \times 2.5 = ₹500$
- Abnormal Loss is to be written off to costing P & L A/c
Value of Abnormal Loss = $400 \times 2.5 = ₹1,000$

- (ii) ABC Ltd. company having 25 different types of automatic machine, furnishes you the following data for 2014-2015 in respect of machine B:

I.	Cost of machine	₹50,000
	Life-10 years	Scrap value is nil
II.	Overhead expenses are:	
	Factory rent	₹50,00 p.a
	Heating & lighting	₹40,000
	Supervision	₹1,50,000 p.a
	Reserve equipment of machine B	₹6,000 p.a
	Area of the factory	80,000 sq.ft.
	Area occupied by machine B	3,000 sq.ft.
III.	Wages of operator is ₹24 per day of 8 hours including all fringe benefits. He attends to one machine when it is under set up and two machines while	

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	under operation.	
IV.	Estimated production hours	3,600 p.a.
	Estimated set up time	400 hrs. p.a.
	Power 0.5 per hour	

Prepare a schedule of comprehensive machine hour rate and find the cost of the following jobs:

	Job 1002	Job 1008
Set up time (hrs.)	80	40
Operation time (hrs.)	130	160

[6+2]

Answer:

Computation of machine hour rate when machine is in operation

Particulars		Amount (₹)
Standing charges:		
Rent	$50,000 \times 3/80$	=1,875
Heating & Lighting	$40,000 \times 3/80$	=1,500
Supervision	$1,50,000 \times 1/25$	=6,000
Reserve equipment		=6,000
		15,375
Cost per hour	$15,375/4,000$	3.84
Machine Expenses:		
Depreciation	$[50,000 \div (10 \times 3,600)] = 1.39$	
Wages	$[24/8 \times 1/2] = 1.50$	
Power	=0.50	3.39
Machine hour rate		7.23

Computation of machine hour rate when machine is under set up

Particulars		Amount (₹)
Standing charges:		
Rent	$50,000 \times 3/80$	=1,875
Heating & lighting	$40,000 \times 3/80$	=1,500
Supervision	$1,50,000 \times 1/25$	=6,000
Reserve equipment		=6,000
		15,375
Cost per hour	$15,375/4,000$	3.84
Machine expenses:		
Depreciation	$[50,000 \div (10 \times 3,600)]$	=1.39
Wages	$[24/8]$	=3.00
Power		-----
Machine Hour Rate		=8.23

Computation of cost of the jobs

Particulars	Job 1002	Job 1008
Set up cost		
Job 1002: 80×8.23	658.40	
Job 1008: 40×8.23		329.2
Operation Cost		
Job 1002: 130×7.23	939.9	
Job 1008: 160×7.23		1,156.8
Total Cost of the Job	1,598.30	1,486.00

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(c)

- (i) A factory has three production departments A, B and C and also two service departments 'X' and 'Y'. The primary distribution of the estimated overheads in the factory has just been completed. These details and the quantum of service rendered by the service departments, to the other departments are given below:

	A	B	C	X	Y
Primary distribution(₹)	2,40,000	2,10,000	2,50,000	1,40,000	96,000
Service rendered by					
Dept 'X'	30%	20%	35%	-	15%
Dept 'Y'	25%	40%	25%	10%	-

Prepare a statement showing the distribution of service dept. overheads to the production departments, by the simultaneous equation method. [5]

Answer:

Let, P and N be the total overheads of the service departments 'X' and 'Y' respectively.
Then,

$P=1,40,000+0.10N$ i.e.,	$10P-N$	$=14,00,000$
$N=96,000+0.15P$ and	$-0.15P+N$	$=96,000$
(By adding)	$9.85P$	$14,96,000$
	$P=14,96,000/9.85$	$=₹1,51,878$
By substitution,	$N=96,000+0.15 \times 1,51,875 = 96,000+22,782$	$=₹1,18,782$

Statement showing the distribution of service dept. overheads to the production departments

(Production Depts.)				
Distribution of overheads of	A(₹)	B(₹)	C(₹)	Total (₹)
1,40,000 Deptt. X(85% of ₹1,51,878)	45,563	30,376	53,157	1,29,096
96,000 Deptt. Y(90% of ₹ 1,18,782) 2,36,000	29,696	47,513	29,695	1,06,904
Total	75,259	77,889	82,852	2,36,000

- (ii) Distinguish between Bin Card and Stores Ledger. [5]

Answer:

Difference between Bin Card and Store Ledger:

	Bin Card	Stores Ledger
I.	It is maintained by the store keeper.	It is maintain in the Costing department.
II.	It contains only quantitative details of materials received, issued and returned to stores.	It contains information both in quantity and value
III.	Entries are made when transactions take place.	It is always posted after the transaction.
IV.	Each transaction is individually posted.	Transactions may be summarized and then posted.
V.	Inter-department transfers do not appear in Bin-Card.	Material transfers from one job to another job are recorded for costing purpose.

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- (iii) In a factory guaranteed wages at the rate of ₹1.80 per hour are paid in a 50 hour week. By time and motion study it is estimated that to manufacture one unit of a particular product 20 minutes are taken, the time allowed is increased by 25%. During the week A produced 180 units of the product. Calculate his wages under the following method:

- I. Time rate.
- II. Piece rate with a guaranteed weekly wages.
- III. Halsey premium bonus.
- IV. Rowan premium Bonus.

[1½×4=6]

Answer:

- I. **Calculation of wages under Time Rate system:**

$$\begin{aligned} \text{Earning under time wages} &= TR \\ &= 50 \times 1.8 = ₹90 \end{aligned}$$

- II. **Calculation of wages under piece rate with Guaranteed Wage Rate**

Normal time for one unit	=20 minutes	
(+) Relation allowance@25%	=5 minutes	
Standard time	=25 minutes	
No. of pieces per hour	60/25 pieces	
Piece rate	=Hourly Rate/No. of piece per hour	
	=1.8 ÷ (60/25)	
	=0.75	
Earning under Piece Rate	=180×0.75=₹135	

- III. **Calculation of wages under Halsey premium Bonus**

Standard time for actual production	=180×25/60	=75 hours
Earning under Halsey plan	= (50×1.8) + 50/100(75-50)×1.8	
	=90+22.5	=₹112.50

- IV. **Calculation of wages under Rowan premium Bonus**

Standard time for actual production	=180×25/60	=75 hours
Earning under rowan plan	= (50×1.8) + (75-50/75)×(50×1.8)	
	=90+30.00	=₹120.00

(d)

- (i) In a factory the expenses of factory are charged on a fixed percentage basis on wages and office overhead expenses are calculated on the basis of percentage of works cost.

	I Order (₹)	II Order (₹)
Material	12,500	18,000
Wages	10,000	14,000
Selling price	44,850	61,880
Percentage of profit on cost	15%	12%

Find the rate of Factory OH and Office OH.

[8]

Answer:

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Let „X“ and „Y“ be the % of Works Overhead on wages and Office Overhead on works cost respectively.

Particulars	Order I	Order II
Material	12,500	18,000
Wages	10,000	14,000
Prime Cost	22,500	32,000
(+) Factory OH's	$(10,000 \times X/100)=100X$	$(14,000 \times X/100)=140X$
Work Cost	$22,500+100X$	$32,000+140X$
(+) Office Overheads [[$100X+22,500$] \times $Y/100$] [[$140X +32,000$] \times $Y/100$]	$XY + 225Y$	$1.4XY + 320Y$
Total Cost	$100X+XY+225Y+22,500$	$140X+1.4XY+320Y+32,000$
Cost	$44,850 \times (100/115)=39,000$	$61,880 \times (100/112)=55,250$

$$\begin{aligned}
 100X + XY + 225Y + 22,500 &= 39,000 \\
 100X + XY + 225Y &= 16,500 \quad \Rightarrow \text{Equ. (1)} \\
 140X + 1.4XY + 320Y + 32,000 &= 55,250 \\
 140X + 1.4XY + 320Y &= 23,250 \quad \Rightarrow \text{Equ. (2)} \\
 \text{Equ. (1)} \times 1.4 \quad \Rightarrow 140X + 1.4XY + 315Y &= 23,100 \\
 \text{Equ. (2)} \quad \quad \quad \Rightarrow 140X + 1.4XY + 320Y &= 23,250 \\
 & \quad \quad \quad (-) \quad \quad (-) \quad \quad (-) \quad \quad (-) \\
 5Y &= 150 \\
 \text{Therefore, } Y &= 150/5 = 30
 \end{aligned}$$

Substituting the value of Y in Equ. (1), we get X
 $100X + 30X + 225 \times 30 = 16,500 \Rightarrow \text{Equ. (1)}$
 $130X + 6750 = 16,500$
 $130X = 9,750$
 $X = 9,750/130 = 75$
 % of Factory OH on wages = 75%
 % of Office OH on works cost = 30%

(ii) In a factory Group Bonus system is in use which is calculated on the basis of earnings under time rate:

- | | |
|---------------------------------------|------------------------------------|
| (a) Output of the group 16,000 units; | (b) Piece rate per 100 units ₹2.50 |
| (c) No. of hours worked by P – 90 | Q – 72 |
| R – 80 | S – 100 |
| (d) Time rate per hour for P = ₹0.80 | Q = ₹1.00 |
| R = ₹1.20 | S = ₹0.80 |

Calculate the total of bonus and wages earned by each worker.

[4+2]

Answer:

Worker	Working	Total Wages
P	$90 \text{ hrs} \times ₹0.80$	₹72
Q	$72 \text{ hrs} \times ₹1.00$	72
R	$80 \text{ hrs} \times ₹1.20$	96
S	$100 \text{ hrs} \times ₹0.80$	80
		320

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Group Earnings

Piece rate for 100 units = ₹2.50

Piece wages for 16,000 units = ₹16,000 × 2.50/100 = ₹400

Wages earned for each worker (including bonus);

P	₹400 × 72/320	=	₹90
Q	₹400 × 72/320	=	90
R	₹400 × 96/320	=	120
S	₹400 × 80/320	=	100
			400

(iii) List the advantages of Just-in-Time.

[2]

Answer.

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

- 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.
- 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 any time. When parts move directly from the truck to the point of assembly, the need for storage facilities is reduced.
- Reduces the working capital requirements, as very little inventory is maintained.
- Minimizes storage space and reduces the chance of inventory obsolescence or damage.

3. (Answer any two questions)

[2×16=32]

(a)

(i) A dealer, having annual sales of ₹50 lakhs, extends 30 days credit period to its debtors. The variable cost is estimated at 80% of sales and fixed costs are ₹6,00,000.

The dealer intends to change the credit policy for which the following information is given:

Credit Policy	Average Collection	Annual Sales
A	45	56
B	60	60
C	75	62

Rate of Return (Pre-tax) required on investment is 20% [Consider 365 days a year]

You are required to-

Assess the most profitable credit policy with the help of incremental approach. [Calculations must be restricted to two decimal places].

[10]

Answer:

Evaluation of Proposed Credit Policies

(₹ in lakhs)

Credit Policy	Present	A	B	C
Period (days)	30.00	45.00	60.00	75.00
Annual sales	50.00	56.00	60.00	62.00
Variable cost (80% of sales)	40.00	44.80	48.00	49.60
Fixed Cost	6.00	6.00	6.00	6.00
Total Cost	46.00	50.80	54.00	55.60
Profit (A.S – T.C)	4.00	5.20	6.00	6.40

Answer to PTP_Intermediate_Syllabus 2012_Jun2015_Set 3

Incremental Profit (A)		1.20	2.00	2.40
Average Investment in Debtors:				
Present: $46 \times [30 / 365]$	3.78			
A: $50.8 \times [45 / 365]$		6.26		
B: $54 \times [60 / 365]$			8.88	
C: $55.6 \times [75 / 365]$				11.42
Incremental Investment in Debtors as compared to Present level:	-	2.48	5.10	7.64
Required return:				
20% incremental investment [B]	-	0.50	1.02	1.53
Excess return [A – B]	-	0.70	0.98	0.87

Policy B, having Average Collection Period 60 days, yields the maximum profit and thus is more profitable.

- (ii) From the balance Sheet of A Ltd., Calculate:
A. Changes in the Working Capital.
B. Funds from Operation.

BALANCE SHEET

LIABILITIES	31 st March		ASSETS	31 st March	
	2014 (₹)	2015 (₹)		2014 (₹)	2015 (₹)
Equity Share Capital:	3,00,000	4,00,000	Goodwill	1,15,000	90,000
8% Preference share capital	1,50,000	1,00,000	Land & Buildings	2,00,000	1,70,000
P & L A/c	30,000	48,000	Plant	80,000	2,00,000
General Reserve	40,000	70,000	Debtors	1,60,000	2,00,000
Proposed Dividend	42,000	50,000	Stock	77,000	1,09,000
Creditors	55,000	83,000	Bills Receivable	20,000	30,000
Bills payable	20,000	16,000	Cash in hand	15,000	10,000
Provision for Taxation	40,000	50,000	Cash at Bank	10,000	8,000
	6,77,000	8,17,000		6,77,000	8,17,000

Following is the additional information available.

- I. Depreciation of ₹10,000 and ₹20,000 has been changed on Plant and land and Buildings respectively in 2015.
- II. Interim dividend of ₹20,000 has been paid in 2015.
- III. Income tax of ₹35,000 has been paid in 2015.

[6]

Answer:

- A. Computation of changes in Working Capital:**

Current Asset	(₹)	
	2014	2015
Debtors	1,60,000	2,00,000
Stock	77,000	1,09,000
B/R	20,000	30,000
Cash in hand	15,000	10,000
Cash at Bank	10,000	8,000
A: Total Current Assets	2,82,000	3,57,000

Answer to PTP_Intermediate_Syllabus 2012_Jun2015_Set 3

Current Liabilities	2014	2015
Creditors	55,000	83,000
B/P	20,000	16,000
B: Total Current Liabilities	75,000	99,000
Working Capital (A – B)	2,07,000	2,58,000

Increase in Working capital ₹2,58,000 – ₹2,07,000 = ₹51,000

B. Computation of Funds From Operation

P & L Adjustment Account			
Dr.			Cr.
Particulars	Amount (₹)	Particulars	Amount (₹)
To Depreciation	30,000	By Balance b/d	30,000
To Preference Dividend (1,50,000 × 8%)	12,000		
To Transfer to G/R	30,000		
To Provision for Tax	45,000		
To Proposed Dividend	50,000		
To Goodwill written off	25,000		
To Interim dividend	20,000		
To Balance C/f	48,000	By Funds from Operation (b/f)	2,30,000
	2,60,000		2,60,000

Working Note:

1. Land & Buildings Account			
Dr.			Cr.
Particulars	Amount (₹)	Particulars	Amount (₹)
To Balance b/d	2,00,000	By Depreciation Provided	20,000
		By bank- sale proceeds (b/f)	10,000
		By balance c/f	1,70,000
	2,00,000		2,00,000

2. Plant Account			
Dr.			Cr.
Particulars	Amount (₹)	Particulars	Amount (₹)
To Balance b/d	80,000	By Depreciation Provided	10,000
To Bank (b/f)	1,30,000	By balance c/f	2,00,000
	2,10,000		2,10,000

3. Provision for Tax Account			
Dr.			Cr.
Particulars	Amount (₹)	Particulars	Amount (₹)
To Bank - paid	35,000	By Balance b/d	40,000
To balance c/f	50,000	By P & L A/c- provided	45,000
	85,000		85,000

Answer to PTP_Intermediate_Syllabus 2012_Jun2015_Set 3

(b)

- (i) From the following information, prepare the Balance Sheet.
Net Profit after Interest, Tax and Preference Dividend — ₹2,22,000
Tax Rate —50%
18% Preference Share Capital — ?
15% Debentures — ?
Return on Capital Employed —50%
Return on Shareholder's funds —60%
Return on Equity Shareholders' Funds —74%
Current Ratio —2:1
Net Fixed Assets ₹9,00,000

[10]

Answer:

$$\text{Equity share holders funds} = \frac{2,22,000}{74} \times 100 = 3,00,000$$

$$\text{Return on share holders' funds} = \frac{\text{EAT}}{\text{Sh. holder funds}}$$

$$\text{Sh. holder fund} = ₹4,00,000$$

$$\text{Preference share capital} = 4,00,000 - 3,00,000 = 1,00,000$$

$$\text{EAT} = 2,22,000 + 0.18 (1,00,000) = ₹2,40,000$$

$$\text{Tax} = 50\% \text{ of EBT or } 100\% \text{ on EAT} = ₹2,40,000$$

$$\text{EBT} = \text{EAT} + \text{TAX} = 2,40,000 + 2,40,000 = ₹4,80,000$$

Let debentures be Y

$$\text{Interest} = 0.15y$$

$$\text{EBIT} = \text{EBT} + \text{Int. on L.T. Debt}$$

$$= 4,80,000 + 0.15Y$$

$$\text{Return on capital employed} = \frac{\text{EBIT}}{\text{Cap. employed}} \times 100$$

$$0.50 = \frac{4,80,000 + 0.15y}{4,00,000 + y}$$

$$15\% \text{ debentures (Y)} = ₹8,00,000$$

$$\text{Capital employed} = (3,00,000 + 1,00,000) + 8,00,000 = ₹12,00,000$$

$$\begin{aligned} \text{Working capital} &= \text{Cap. Employed} - \text{Net FA} \\ &= 12,00,000 - 9,00,000 \\ &= 3,00,000 \text{ or } \text{CA} - \text{CL} = 3,00,000 \dots (i) \end{aligned}$$

$$\text{Current ratio} = \frac{\text{CA}}{\text{CL}} = 2:1$$

$$\text{Or } \text{CA} - 2 \text{ CL} = 0 \dots (ii)$$

$$(i) - (ii) \quad \text{CL} = 3,00,000$$

$$\text{CA} = 3,00,000 \times 2 = 6,00,000$$

$$\text{Total assets} = \text{FA} + \text{CA} = 9,00,000 + 6,00,000 = 15,00,000$$

$$\text{EBIT} = 4,80,000 + 15\% \text{ of } ₹8,00,000 = ₹6,00,000$$

Answer to PTP_Intermediate_Syllabus 2012_Jun2015_Set 3

Balance Sheet

Liabilities	₹	Assets	₹
Eq. Sh. holders funds	3,00,000	Fixed assets	9,00,000
Preference share capital	1,00,000	Current assets	6,00,000
15% debenture	8,00,000		
Current liabilities	3,00,000		
Total	15,00,000		15,00,000

- (ii) Bisk – Farm Biscuits Ltd is considering the purchase of a delivery van, and is evaluating the following two choices:
- I. The company can buy a used van for ₹20,000 and after 4 years sell the same for ₹2,500 (net of taxes) and replace it with another used van which is expected to cost ₹30,000 and has 6 years life with no terminating value,
 - II. The company can buy a new van for ₹40,000. The projected life of the van is 10 years and has an expected salvage value (net of taxes) of ₹5,000 at the end of 10 years.
- The services provided by the vans under both the choices are the same. Assuming the cost of capital at 10 percent, which choice is preferable? [6]

Answer:

Calculation of mutually exclusive decision

Alternative I: company purchased a used van

Calculation of PV of cash outflow:

Year	Cash outflow	PV factor at 10%	Present Value
t ₀	20,000	1	20,000
t ₁₀	27,500 (30,000 – 2,500)	0.6830	18,783
PV of total cash outflow			38,783

Alternative II: Company purchased a new van

Year	Cash outflow	PV factor at 10%	Present Value
t ₀	40,000	1	40,000
t ₁₀	(5,000)	0.3855	(1,928)
PV of net cash outflow			38,072

Comment:

It is advised to select alternative II as it involves lower cash outflows.

Answer to PTP_Intermediate_Syllabus 2012_Jun2015_Set 3

(c)

(i) The capital structure of J Ltd. is as under:

	₹
Equity shares @ ₹10 each	100,00,000
9% preference shares @ ₹100 each	30,00,000
14% Debentures @ ₹100 each	70,00,000
The market price of these securities are:	
Equity shares	35 per share
Preference shares	120 per share
Debentures	110 per debenture

Other information is:

- Equity shares have a floatation cost of ₹5 per share. The next year's expected dividend is ₹3 with annual growth of 5%. The company pays all earnings in the form of dividends.
- Preference Shares are redeemable at a premium of 10%, have 2% floatation cost and 10 year maturity.
- Debentures are redeemable at par, have 4% floatation and 10 per year maturity.
- Corporate tax rate is 30%.

You are required to calculate the weighted average cost of capital using (i) book value weights and (ii) market value weights. [8]

Answer:

$$\begin{aligned}
 \text{Cost of capital (Ke)} &= \frac{D}{P} + G \\
 &= \frac{3}{(35-5)} + 0.05 \\
 &= \frac{3}{30} + 0.05 \\
 &= 0.10 + 0.05 \\
 &= 0.15 \text{ or } 15\%
 \end{aligned}$$

$$\begin{aligned}
 \text{Cost of preference capital (kp)} &= \frac{9 + \frac{(110-98)}{10}}{(110+98)} \\
 &= \frac{2}{104} \\
 &= \frac{(9+1.2)}{104} \\
 &= 0.098 \text{ Or } 9.8\%
 \end{aligned}$$

$$\begin{aligned}
 \text{Cost of Debt (kd)} &= \frac{14(1-0.3) + \frac{(100-96)}{10}}{(100+96)} \\
 &= \frac{2}{98} \\
 &= \frac{14 \times 0.7 + 0.4}{98} \\
 &= \frac{9.8 + 0.4}{98} \\
 &= 10.2 / 98 \\
 &= 0.1041 \text{ or } 10.41\%
 \end{aligned}$$

Answer to PTP_Intermediate_Syllabus 2012_Jun2015_Set 3

Calculation of WACC using value weights:

Source of Capital	Book Value (₹)	Weight (W)	Specification (K)	WACC
Equity Shares	100,00,000	0.5	0.15	0.075
9% Preference Shares	30,00,000	0.15	0.098	0.0147
14% Debentures	70,00,000	0.35	0.1041	0.0364
	200,00,000	1.00		0.1261

WACC = 0.1261 or 12.61%

Calculation of WACC using market value weights:

Source of Capital	Book Value (₹)	Weight (W)	Specification (K)	WACC
Equity Shares	350,00,000	0.756	0.15	0.1134
9% Preference Shares	36,00,000	0.078	0.098	0.0076
14% Debentures	77,00,000	0.166	0.1041	0.0173
	463,00,000	1.00		0.1383

WACC = 0.1383 or 13.83%

- (ii) Explain how the combined effects of operating and financial leverages provide the risk profile of an organization. [4]

Answer:

The total risk involved in a firm can be determined by combining the operating and financial leverages. The Degree of combined leverage is calculated by multiplying the two leverages. As a rule, a firm having a high operating leverage should have a low financial leverage and vice versa. If a firm has both the leverages at a high level, it will be a very risky proposition because the combined effect of the two is a multiple of these two leverages. As such if a firm has a high operating leverage the financial leverage should be kept low. Thus it will be necessary to have a proper balance between operating and financial leverage of keep the risk profile of a firm within a reasonable limit. Such a situation should also maximize return to shareholders.

- (iii) Write a short note on Certificate of Deposits in India. [4]

Answer:

Certificate of Deposit (CDs) in India:

Certificates of Deposit (CDs) is a negotiable money market instrument issued in dematerialised form or as a Usance Promissory Note, for funds deposited at a bank or other eligible financial institution for a specified time period. Guidelines for issue of CDs are presently governed by various directives issued by the Reserve Bank of India, as amended from time to time. CDs can be issued by (i) scheduled commercial banks excluding Regional Rural Banks (RRBs) and Local Area Banks (LABs); and (ii) select all-India Financial Institutions that have been permitted by RBI to raise short-term resources within the umbrella limit fixed by RBI. Banks have the freedom to issue CDs depending on their requirements. An FI may issue CDs within the overall umbrella limit fixed by RBI, i.e., issue of CD together with other instruments viz., term money, term deposits, commercial papers and inter corporate deposits should not exceed 100 percent of its net owned funds, as per the latest audited balance sheet.