INTERMEDIATE EXAMINATION

GROUP I

(SYLLABUS 2012)

SUGGESTED ANSWERS TO QUESTIONS

DECEMBER 2015

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.
All questions are compulsory, subject to internal choices
as per instruction provided against each question.
All working must form part of your answers.

Wherever necessary, candidates may make suitable assumptions and clearly state them in the answer. No present value factor table or other table will be provided along with this question paper.

I. Answer all sub-divisions: 2×10 =20

(a) A worker has produced 154 units in 10 hours instead of 15 hours. If the normal wages rate is ₹30 per hour find his remuneration under Rowan Premium Plan.

(b) If current ratio is 2.4 : 1 and working capital is ₹25,20,000, find the amount of current assets and current liabilities.

(c) G Ltd. issues 20,000,12% debentures of ₹100 each at premium of 10 per cent. The debentures are redeemable after the expiry of a fixed period of 10 years at 20 per cent premium. Calculate the cost of debt after 30% tax.

(d) Factory cost is ₹3,80,000 and cost of production is ₹4,10,000. Office and administrative overheads are 20% of factory overheads. What would be amount of prime cost? Assume no stock adjustments.

(e) State two main differences between scrap and spoilage.

(f) In the specimen cost sheet of a production centre, how would you arrive at the cost of sale from the prime cost?

(g) The M-M hypothesis on capital structure assumes a perfect capital market. State 4 features of such a market assumed by the hypothesis.

(h) A firm earns a contribution of ₹4,80,000. Its operating leverage and financial leverage are respectively 4 and 5. Find the firm's PAT if the effective tax rate is 25%.

(i) If a factory worked 3 shifts/day for 365 days it can produce 8,03,000 units.

52 Sundays during the year are holidays. There are 12 festival holidays. Breakdown of machine normally happens for 6 days. Labour shortage/Inventory taking etc. consume 8 clays per annum. In the forthcoming year as well as in future, the market share of the company's product will be sufficient to demand only lesser quantities due to competition. Hence it is estimated that two shift working will be enough for the future. Determine the practical capacity and the normal capacity for the forthcoming year.

(j) An examination centre has many rooms. 800 students are allotted seats @ 50 students per room. Every room requires two invigilators at ₹2,000/- per invigilator.

Based on cost behavior, under which type of cost will you classify the invigilator costs, if the cost object is (i) an individual student (ii) a batch of 50 students?

Answer:

I. (a)

Remuneration under Rowan Plan	₹
Normal wages: 10 hrs × ₹ 30 =	300
Add: Bonus = $\frac{\left[H \times R + (S - H)\right]}{S} = \frac{10 \times (15-10)}{15} \times 30 =$ Where, H = Hours worked S = Standard Hrs. and R = Rate per Hour	100
Remuneration under Rowan Plan =	400

(b) Let, Current liability be 'x' and current assets be 2.4x

Then, Working capital = 2.4x – x = ₹25,20,000

X (Current liabilities) = ₹25,20,000/1.4 = ₹18,00,000

Current Assets = 18,00,000 × 2.4 = ₹43,20,000.

(c) $K_d = \frac{I(1-t)+\left(\frac{RV-NP}{N}\right)}{\left(\frac{RV+NP}{2}\right)} = \frac{12(1-0.3)+\left(\frac{120-110}{10}\right)}{\frac{120+110}{2}}$

= (8.4 +1)/115 = 0.081739 or 8.1739%.

(d) Amount of office and administrative overheads = ₹4,10,000 – 3,80,000 = ₹30,000

Factory overheads =Office and Administrative Overhead/20% = ₹30,000/20% = ₹1,50,000

Prime Cost = ₹3,80,000 – ₹1,50,000 = ₹2,30,000.

(e)

Scrap	**Spoilage**
Incidental material residue in a process in small amounts	Damage due to defective working

It has low market value	Market value can range from zero to substantial portion of selling price
Normally involves material wastage	It involves wastage of Material, Labour, Direct Expenses and Overheads up to point of spoilage.
Scrap should always be physically available.	The components/materials are damaged in such a way that they cannot be bought back to normal specifications by repairs or reconditioning.

(f)

		₹	₹
PRIME COST			xxxxx
Add: Production Overheads		xxxxx	
Add: Opening Work in process		xxxxx	
Less: Closing Work in process		xxxxx	xxxxx
FACTORY COST OR WORK COST	A		xxxxx
Add: Administrative Overheads			xxxxx
COST OF GOODS MANUFACTURED	B		xxxxx
Add: Opening Stock of Finished Goods		xxxxx	
Less: Closing Stock of Finished Goods		xxxxx	xxxxx
COST OF FINISHED GOODS SOLD	C		xxxxx
Add: Selling and Distribution Overheads			xxxxx
COST OF GOODS SOLD	D		xxxxx

(g) The features of the capital markets assumed by MM hypothesis are:

(i) Investors are free to buy and sell securities.

(ii) They can borrow funds without restriction at the same to me as the firms do.

(iii) Investors behave rationally.

(iv) They are well informed.

(v) These are no transaction costs.

(vi) There is no transaction cost

(vii) Dividend Policy has no effect on the firm's Cost of Equity.

(h) Combined Leverage = Operating Leverage × Financial Leverage = 4×5 = 20

Combined leverage = Contribution/ EBT

EBT = Contribution/Combined Leverage = ₹4,80,000/20 = ₹24,000

PAT = EBT × (1 – Tax rate) = 24,000 × (1 – 0.25) = ₹18,000.

(i) Theoretical Capacity = 8,03,000 (based on 365 days)

Practical Capacity = $\frac{[365-(52+12+6+8)]}{365} \times 8,03,000 = 6,31,400$ units

Thus Practical capacity is about 78.63% of theoretical Capacity.

Normal Capacity is based on long term sales expectancy

= 2 shifts x $\frac{6,31,400}{3 \text{ shifts}}$ = 4,20,933 units.

(j) If the cost object is an individual student, invigilator cost is Fixed Cost.

If batch of 50 is cost object then, invigilator cost is Variable Cost.

II. Answer any three sub-divisions from (a) to (d): 16×3=48

(a) (1) A Ltd. was ordering (in economic order quantities) (EOQ) its raw material RM at a price of ₹750 per unit. The average annual consumption was 18000 units. Carrying cost was 20% of average inventory and the ordering cost was ₹1500 per order. A Ltd. wants to move towards the Just-In-Time system and the new policy proposes as follows: the average number of units held in stock will be 100 units; ordering cost per order will be ₹1510; carrying cost will be 20% of average inventory. However the purchase price will increase. The total new ordering cost will be 9 times the new carrying cost.

(i) What was the EOQ before the new policy?

(ii) Calculate the inventory turnover ratio before and after the new policy.

(iii) How much is the increase in purchase price under the new policy? Compare the two policies regarding raw material management and offer your comments. 3+4+5=12

(2) In each of the following independent situations, state with a brief reason, the method of overhead absorption you would recommend as a Cost Accountant:

(i) Product: hand crafted statues for corporate gifts

	₹/unit
Material	**360**
Direct labour	**300**
Direct Expenses	**120**
Selling price	**1,000**

(ii) Product: Mass- manufactured 10mm bearings, produced by stamping machines. Bearings of varying sizes are mass- manufactured by the factory.

	₹/unit
Material	**80**
Direct labour	**15**
Direct Expenses	**20**
Selling price	**250**

2+2=4

Answer:

II. (a) (1)

(i) Let, 'q' be the EOQ.

At EOQ, Ordering cost = Carrying cost

$$\frac{18,000}{q} \times 1,500 = 750 \times 20\% \times \frac{q}{2}$$

$$q^2 = \frac{18,000 \times 1500 \times 2}{750 \times 20\%}$$

q = 600

Therefore, before the new policy the EOQ was 600 units.

(ii) Inventory turnover ratio = $\frac{\text{Cost of goods sold}}{\text{Average inventory}}$

Before the new policy = $\frac{18,000 \times 750}{\frac{600}{2} \times 750} = \frac{18,000}{300} = 60 \text{ times}$

After the new policy = $\frac{18,000 \times 750}{100 \times 750} = \frac{18,000}{100} = 180 \text{ times}$

(iii) Let 'X' be the new purchase price

As per the question,
9 (20% x 100 x X) = (18,000/200) x 1510 [assuming the EOQ = 100 x 2 = 200 units]
Or, 180 X = 1,35,900
Or, X = 755
Therefore, increase in purchase price is ₹ 5 p.u.

Comparison of policies

Particulars	Computation	Old policy	New policy
Purchase cost	18,000 x 750 18,000 x 755	1,35,00,000	 1,35,90,000
Ordering cost	(18,000 ÷ 600) x 1500 (18000 ÷ 200) x 1510	45,000	 1,35,900
Carrying cost	20% of (600 ÷ 2) x 750 20 % of (200 ÷ 2) x 755	45,000	 15,100
Total		1,35,90,000	1,37,41,000

As the total cost is more in case of new policy, inventory management should be as per EOQ method.

II. (a)(2) Methods of Overhead Absorption:

- Percentage of Prime Cost
  - Here, the product is standard one and Direct Material and Direct Labour costs are not varying much.

- It is Mass Manufacturing by Machines.
  - It should be on the basis of Machine Hour Rate.

(b) PQ Ltd. wishes to use standard costing system to report variances to the Management.

The following data is given:

Nature of Product: **Single product PQ, an electronic component, produced by manual assembly of purchased parts.**

The following persons are involved in production:

Category	*Details*
DW	**Direct workers involved in the assembly.**
PA	**Production Assistants who are helpers in the shop floor.**
SS	**Supervisory staff in the production shop floor.**
OS	**Office staff exclusively meant for production.**

Other Information	
Shift:	**Single shift from 9-00 a.m. to 5-00 p.m.**
Tea breaks:	**15 minutes pre-lunch** **15 minutes post-lunch**
Lunch:	**1 hour**
Waiting time for spares, parts, etc.	**2 hours / week (on an average 20 minutes/day)**

Normally, according to past average, 5 units of PQ are finished by a direct worker during one shift.

The details for labour pay- outs are as follows:

	DW	PA	SS	OS
No. of persons	**35**	**4**	**7**	**2**
Basic pay	**₹75/hour**	**₹ 300/ shift**	**₹800/ shift**	**₹35,000/ month**
Leave Travel Assistance (per annum per person)	**₹ 10,000**	**₹8,000**	**₹20,000**	**₹25,000**
Rates of pay on holidays (2 holidays per month other than Sundays)	**₹100/hour**	**₹500/ shift**	**₹1,000/shift**	**₹2,000/ day**
Attendance bonus for attendance of 80% or more no. of days. Flat rate ₹/person/month	**2,000**	**1,500**	**3,000**	**4,000**

The factory works on all holidays other than Sundays. Assume all the 52 Sundays are holidays and are weekly offs. 80% of the DW category get the attendance bonus, while in other categories, all the persons get the bonus.

(i) For the DW category, arrive at the standard labour cost per unit and the standard number of direct labour hours per unit of PQ to enable periodic reporting and corrective action by comparing variances.

(ii) What amounts, on an annual basis, as per cost Accounting Standards would you show under Direct Labour, Works Overhead, Administrative Overhead or charge directly to the P&L A/c?
(Show workings per week x 52 weeks per annum). **4+12=16**

Answer:

II. (b)

(i) Hours per week = 8 × 6 = 48.

Average no. of products = 5 × 6 = 30.

DW hours paid = ₹75/hr × 48 hrs/week = ₹3,600.

Standard DW hrs/ unit of production = $\frac{48}{30}$ = 1 hrs 36 min. per piece or, $\frac{8\,\text{hrs}}{5\,\text{pcs}}$ = 1.6 hrs/ piece.

Standard Direct Labour Cost/ unit = $\frac{₹3,600}{30}$ = ₹120 / unit or, 1.6 × ₹75 = ₹120.

Note: Tea-break, normal waiting time for job should be part of the standard time.

A. Assuming that Production Assistants as Direct workers and Rates of pay for holidays is inclusive of basic wages:

(ii)

Amounts in ₹

Particulars	**DW**	**PA**	**SS**	**OS**
No. of persons	35	4	7	2
Basic Pay				
Per week Amount in ₹	75/hr × 8 hrs/day × 6 days/ week × 35 DW = 1,26,000	300/day × 6 days × 4 pa = 7,200	800/day × 6 days × 7 SS = 33,600	35,000/ m × 2 OS = 70,000
Per annum Amount in ₹	1,26,000 × 52 weeks = 65,52,000 (Direct Labour)	7,200 × 52 weeks = 3,74,400 (Direct Labour))	33,600 × 52 weeks = 17,47,200 (Production Overhead)	70,000 × 12 m = 8,40,000 (Administration Overhead)
LTA Amount in ₹	10,000×35 = 3,50,000 (Direct Labour)	8,000 × 4 = 32,000 (Direct Labour)	20,000 × 7 = 1,40,000 (Production Overhead)	25,000 × 2 =50,000 (Administration Overhead)
Holiday Premium Amount in ₹	(100-75) × 8 hrs/day × 2 days/m × 12 m × 35 DW = 1,68,000 (Production Overhead)	(500-300)/day × 2 days/m × 12 m × 4 PA = 19,200 (Production Overhead)	(1,000-800)/day × 2 days/ m × 12 m × 7 SS = 33,600 (Production Overhead)	2,000/day × 2 days/ m × 12m × 2 0S = 96,000 (Administration Overhead)

Attendance Bonus Amount in ₹	2,000 × 12 m × 80% of 35 DW =6,72,000 (Production Overhead)	1,500 × 12 m × 4 PA = 72,000 (Production Overhead)	3,000 × 12m × 7 SS = 2,52,000 (Production Overhead)	4,000 × 12 m × 2 OS = 96,000 (Administration Overhead)

Particulars		**Direct Labour ₹**	**Production Overhead ₹**	**Administration Overhead ₹**
Basic Pay				
DW		65,52,000		
PA		3,74,400		
SS			17,47,200	
OS				8,40,000
LTA				
DW		3,50,000		
PA		32,000		
SS			1,40,000	
OS				50,000
Holiday Premium				
DW			1,68,000	
PA			19,200	
SS			33,600	
OS				96,000
Attendance bonus				
DW			6,72,000	
PA			72,000	
SS			2,52,000	
OS				96,000
Total		73,08,400	31,03,800	10,82,000

ALTERNATIVELY:

B. Assuming that Production Assistants as Direct workers and Rates of pay for holidays is exclusive of basic wages:

(ii)

Amounts in ₹

Particulars	**DW**	**PA**	**SS**	**OS**
No. of persons	35	4	7	2
Basic Pay				
Per week Amount in ₹	75/hr × 8 hrs/day × 6 days/week × 35 DW = 1,26,000	300/day × 6 days × 4 PA = 7,200	800/day × 6 days × 7 SS = 33,600	35,000/m × 2 OS = 70,000
Per annum	1,26,000×52 weeks	7,200 × 52 weeks =	33,600 × 52 weeks =	70,000 × 12 m =

Amount in ₹	= 65,52,000 (Direct Labour)	3,74,400 (Direct Labour)	17,47,200 (Production Overhead)	8,40,000 (Administration Overhead)
LTA Amount in ₹	10,000×35 = 3,50,000 (Direct Labour)	8,000 × 4 = 32,000 (Direct Labour)	20,000 × 7 = 1,40,000 (Production Overhead)	25,000 × 2 =50,000 (Administration Overhead)
Holiday Premium Amount in ₹	75/hr × 8 hrs/day × 2 days/m × 12 m × 35 DW = 5,04,000 (Direct Labour) (100-75) × 8hrs/day × 2 days/m × 12 m × 35 DW = 1,68,000 (Production Overhead)	300/day × 2 days /m × 12 m 4 PA = 28,800 (Direct Labour) (500-300) /day × 2 days/m × 12 m × 4 PA = 19,200 (Production Overhead)	800/day × 2day/m × 12m × 7SS = 1,34,400 (Production Overhead) (1,000-800)/day × 2 days/ m × 12 m×7SS = 33,600 (Production Overhead)	2,000 / day × 2 days/m × 12m × 2 0S = 96,000 (Administration Overhead)
Attendance Bonus Amount in ₹	2,000 × 12 m × 80% of 35 DW =6,72,000 (Production Overhead)	1,500 × 12 m × 4 PA = 72,000 (Production Overhead)	3,000 × 12m × 7 SS = 2,52,000 (Production Overhead)	4,000 × 12 m × 2 OS = 96,000 (Administration Overhead)

Particulars	Direct Labour ₹	Production Overhead ₹	Adm. Overhead ₹
Basic Pay			
DW	65,52,000		
PA	3,74,400		
SS		17,47,200	
OS			8,40,000
LTA			
DW	3,50,000		
PA	32,000		
SS		1,40,000	
OS			50,000
Holiday Premium			
DW	5,04,000	1,68,000	
PA		(28,800+19,200) i.e. 48,000	
SS		(1,34,400+33,600) i.e. 1,68,000	
OS			96,000
Attendance bonus			
DW		6,72,000	
PA		72,000	
SS		2,52,000	
OS			96,000
Total	78,12,000	32,67,000	10,82,000

ALTERNATIVELY:

C. Assuming that Production Assistants as not direct workers and Rates of pay for holidays is inclusive of basic wages:

(ii)

Amounts in ₹

Particulars	DW	PA	SS	OS
No. of persons	35	4	7	2
Basic Pay				
Per week Amount in ₹	75/hr × 8 hrs/day × 6 days/week × 35 DW = 1,26,000	300/day × 6 days × 4 pa = 7,200	800/day × 6 days ×7 SS = 33,600	35,000/m × 2 OS = 70,000
Per annum Amount in ₹	1,26,000 × 52 weeks = 65,52,000 (Direct Labour)	7,200 × 52 weeks = 3,74,400 (Production Overhead)	33,600 × 52 weeks = 17,47,200 (Production Overhead)	70,000 × 12 m = 8,40,000 (Administration Overhead)
LTA Amount in ₹	10,000×35 = 3,50,000 (Direct Labour)	8,000 ×4 = 32,000 (Production Overhead)	20,000 ×7= 1,40,000 (Production Overhead)	25,000 × 2 =50,000 (Administration Overhead)
Holiday Premium Amount in ₹	(100-75) ×8 hrs/day × 2 days/m × 12 m × 35 DW = 1,68,000 (Production Overhead)	(500-300)/day × 2 days/m × 12 m × 4 PA = 19,200 (Production Overhead)	(1,000 -800)/day × 2 days/ m ×12m × 7SS = 33,600 (Production Overhead)	2,000/day × 2 days/ m × 12m ×2 0S = 96,000 (Administration Overhead)
Attendance Bonus Amount in ₹	2,000 × 12 m × 80% of 35 DW =6,72,000 (Production Overhead)	1,500 × 12 m × 4 PA = 72,000 (Production Overhead)	3,000 × 12m × 7 SS = 2,52,000 (Production Overhead)	4,000 × 12 m ×2 OS = 96,000 (Administration Overhead)

Particulars	Direct Labour ₹	Production Overhead ₹	Administration Overhead ₹
Basic Pay			
DW	65,52,000		
PA		3,74,400	
SS		17,47,200	
OS			8,40,000
LTA			
DW	3,50,000		
PA		32,000	
SS		1,40,000	
OS			50,000
Holiday Premium			
DW		1,68,000	

PA		19,200	
SS		33,600	
OS			96,000
Attendance bonus			
DW		6,72,000	
PA		72,000	
SS		2,52,000	
OS			96,000
Total	69,02,000	35,10,400	10,82,000

ALTERNATIVELY:

D. Assuming that Production Assistants are not Direct Workers and that the holiday rates are exclusive of basic wages (i.e. holiday rates are over and above basic wages):

(ii)

Amounts in ₹

Particulars	**DW**	**PA**	**SS**	**OS**
No. of persons	35	4	7	2
Basic Pay				
Per week Amount in ₹	75/ hr × 8 hrs/day × 6 days/ week × 35 DW = 1,26,000	300/day × 6 days × 4 PA = 7,200	800/ day × 6 days × 7 SS = 33,600	35,000/ m × 2 OS = 70,000
Per annum Amount in ₹	1,26,000×52 weeks = 65,52,000 (Direct Labour)	7,200 × 52 weeks = 3,74,400 (Production Overhead)	33,600 × 52 weeks = 17,47,200 (Production Overhead)	70,000 × 12 m = 8,40,000 (Administration Overhead)
LTA Amount in ₹	10,000×35 = 3,50,000 (Direct Labour)	8,000 × 4 = 32,000 (Production Overhead)	20,000×7= 1,40,000 (Production Overhead)	25,000 × 2 =50,000 (Administration Overhead)
Holiday Premium Amount in ₹	75/hr × 8 hrs/day × 2 days/m × 12 m × 35 DW = 5,04,000 (Direct Labour) (100-75) ×8 hrs/day × 2 days/m × 12 m × 35 DW = 1,68,000 (Production Overhead)	300/day × 2 days/ m × 12 m 4 PA = 28,800 (Production Overhead) (500-300)/day × 2 days/m × 12 m × 4 PA = 19,200 (Production Overhead)	800/day × 2day/m × 12 m × 7 SS = 1,34,400 (Production Overhead) (1,000-800)/day × 2 days/m×12 m×7SS= 33,600 (Production Overhead)	2,000 / day × 2 days/m × 12m ×2 0S = 96,000 (Administration Overhead)
Attendance Bonus Amount in ₹	2,000 × 12 m ×80% of 35 DW =6,72,000 (Production Overhead)	1,500 × 12 m × 4 PA = 72,000 (Production Overhead)	3,000 × 12m × 7 SS = 2,52,000 (Production Overhead)	4,000 × 12 m × 2 OS = 96,000 (Administration Overhead)

Particulars	Direct Labour ₹	Production Overhead ₹	Administration Overhead ₹
Basic Pay			
DW	65,52,000		
PA		3,74,400	
SS		17,47,200	
OS			8,40,000
LTA			
DW	3,50,000		
PA		32,000	
SS		1,40,000	
OS			50,000
Holiday Premium			
DW	5,04,000	1,68,000	
PA		(28,800+19,200) i.e. 48,000	
SS		(1,34,400+33,600) i.e. 1,68,000	
OS			96,000
Attendance bonus			
DW		6,72,000	
PA		72,000	
SS		2,52,000	
OS			96,000
Total	74,06,000	36,73,600	10,82,000

Explanation for treatment of above expenses is as per CAS 7. Students are not required to give reasons. However, for information, following is stated.

Note: As per CAS - 7

A. **Indirect Labour Cost** is the cost, which cannot be identified with a product unit. It represents the amount of wages which is paid to the workers who are not directly engaged on the production but **it includes wages paid to the workers and assistants working in departments** like purchasing, store keeping, time office, maintenance, and other service and **production departments**. Hence, payment to PA should be treated as Production Overhead.

B. **Holiday/Overtime premium**: This is defined as 'Overtime is the time spent beyond the normal working hours' which is usually paid at a higher rate than the normal time rate. **The extra amount beyond the normal wages & salaries paid is called Overtime Premium'.**

C. Treatment of Overtime in Cost Records As per CAS-7, Overtime Premium shall be assigned directly to the cost object or treated as overheads depending on the economic feasibility and specific circumstances requiring such overtime. **When overtime is worked due to exigencies or urgencies of the work, the basic/normal payment is treated as Direct Labour Cost and charged to Production or cost unit on which the worker is employed. Whereas the amount of premium (extra amount) is treated as overhead.**

D. **Leave Travel Assistance** Leave Travel Assistance is paid to practically all the employees presently and therefore can be considered as a regular element of labour or staff cost as

the case may be. This expenditure is of a fixed nature and can be easily predetermined. **Depending whether the assistance is payable to direct labour, indirect labour or staff the expenditure should be treated as Direct Labour Cost, Production Overhead Cost or Administrative Selling Overhead Cost and should be appropriately charged.**

E. **Attendance Bonus** is paid to workers based on satisfactory attendance over a stated period and is a fringe benefit. **The cost is to be collected under a standing order number and charged as a departmental overhead as the expenses cannot be allocated to cost units directly.**

When the cost is of a regular nature it may be booked as direct wages and charged by an inflated rate over the Direct Labour Cost. **But this is however, not a sound policy.**

(c) (1) Kovid Ltd. has three production departments viz. A, B and C and two service departments viz. X and Y. Allocated overheads are follows:

	A	B	C	X	Y
Allocated overheads (₹)	2,50,000	85,000	1,75,000	1,35,000	1,65,000
Direct Labour Hours (Hours)	25,000	18,000	13,000	-	-

The expenses of the service departments are charged as follows:

	A	B	C	X	Y
Service Department: X	20%	40%	30%	-	10%
Y	30%	25%	25%	20%	-

(i) Determine the total overheads of the service departments after loading the inter-departmental exchange of services, by the simultaneous equation method.

(ii) Calculate the overhead to be charged to Job 211 which uses 25 hours in Production Department A. 4+3=7

(2) A medicinal herb is collected by tribal people from the forest regions. The Purchase Department staff of X Ltd. visit the tribals in the villages, purchase the herbs and transport the herbs to the factory. The herbs are cleaned, dried, powdered and machine-packed in 100 gm sachets and sold as a certain curative medicine.

Which of the following items of cost will be treated as a direct expense under CAS – 10? If a certain item is not classified as a direct expense, under what element will it get classified?

(i) Amount paid to the tribals.

(ii) The product is patented. The cost of the patents.

(iii) For every sachet sold, the tribal chief gets 5% as royalty. The amount of royalty.

(iv) A pharmaceutical consultant is paid to test the effectiveness of each batch of medicine processed. The fees so paid.

(v) Travel expenses of the Purchase Department personnel to the villages.

(vi) Transport cost from the villages to the factory.

(vii) Cost of the packing sachets.

(viii) Cost of the personnel working in the cleaning and drying processes. 4

(3) Milk is produced in a factory and packed in half liter sachets. 100 sachets are packed in each metallic reusable container and the containers are transported to milk depots in airconditioned trucks, refrigerated in the depots and sold in retail. State the element of cost under which the factory has to classify the following items as per Cost Accountancy Standards.

(i) Cost of the sachets

(ii) Cost of the containers

(iii) Transportation costs

(iv) Refrigeration costs

(v) Depot's expenses – like rent, salary of staff etc.

(vi) Cost of advertising for the milk **3**

(4) ₹3,000/- and ₹60,000/- are written off raw materials and finished goods respectively for obsolescence. How should these be treated in Cost Accounts? **2**

Answer:

II. (c) (1)

(i) Let total overhead of department X be 'a' and department Y be 'b'

Then, a = 1,35,000 + 0.2b

Or

10a – 2b = 13,50,000……(i)

b = 1,65,000 + 0.1a

or – a+ 10b = 16,50,000 …….. (ii)

After solving equation (i) & (ii)

-a + 10b = 16,50,000 ……(ii)

50a – 10b = 67,50,000 …..(iii)

49a = 84,00,000

Or a = 1,71,428.6

10 × 1,71,428.6 – 2b = 13,50,000

Or – 2b = 13,50,000 – 17,14,286

Or $b = \frac{3,64,286}{2}$

Or b = 1,82,143

Departmental overhead after apportionment of service Dept. Overheads.

Particulars	Production Departments			Service Departments	
	A ₹	B ₹	C ₹	X ₹	Y ₹
Allocated Overheads	2,50,000	85,000	1,75,000	1,35,000	1,65,000
Distribution of Service Dept. overheads:					
X (a) ₹1,71,428.6 (20: 40: 30: - : 10)	34,286	68,572	51,429	- 1,17,428.60	17,143

Y (b) ₹1,82,143 (30 : 25 : 25 : 20 : -)	54,643	45,536	45,536	36,428.6	- 1,82,143
Total Departmental Overhead	3,38,929	1,99,108	2,71,965	Nil	Nil

(ii) Calculation of Direct Labour Hour rate

Production Department	A
Total Departmental Overheads (₹)	₹3,38,928
Direct Labour Hours (Hours)	25,000
Direct Labour Hour rate $\left[\frac{\text{Dept. Overhead}}{\text{Direct Labour Hours}}\right]$	₹13.557

Calculation of overhead charged to job No. 211

Dept. A: ₹13.557 × 25 hours = ₹338.925

II. (c) (2)

(i) Payment Cost
(ii) Royalty
(iii) Fees of pharmaceutical Consultant
(iv) Cost of personnel in cleaning and drying – Direct Labour
(v) Amount paid to tribal – Raw Materials
(vi) Travel expenses of Purchase Department personnel for Raw Materials purchase – Raw Material or Administrative Overhead.
(vii) Transport from village to factory – Raw Material
(viii) Cost of the packing sachets - Production Overhead

II. (c) (3)

	A	B	C
(i)	Cost of sachets	Primary Packing Material	Production Overhead
(ii)	Cost of containers	Secondary Packing Material	Selling and Distribution Overhead
(iii)	Transportation costs	Relates to Finished Goods	Distribution Overhead
(iv)	Refrigeration costs	Storage of Finished Goods	Distribution Overhead
(v)	Depot's expenses	Marketing Cost	Selling & Distribution Overhead
(vi)	Advertisement Cost	Selling Expense	Selling & Distribution Overhead

II. (c) (4)

Obsolete inventory- Cost of Raw Mmaterial and Finished goods should be directly written of in the Profit & Loss A/c. No charge is made to cost of production.

₹63,000 (₹63,000 + ₹60,000) should be written off to Profit & Loss A/c.

(d) (1) What are the differences between Cost Control and Cost Reduction? 4

(2) What is meant by the following terms? Given an example of each in a situation where a factory makes use of the same production facility to make products A, B, C and D using the same raw material R.

(i) Opportunity cost
(ii) Relevant cost
(iii) Replacement cost 2×3=6

(3) Product B, with selling price of ₹600 per unit is the main product being produced by a factory. The factory uses component 'A' in the manufacture of B. 'A' is produced in-house. The cost producing one unit of A is as follows: Direct Material—₹120; Direct labour—₹80; Direct expense—₹20; Factory overheads: fixed—₹20; variable—₹15; Administrative expenses:—relating to production—₹12; - relating to others—₹5;

What is the amount relating to 'A' to be considered as material cost of B as per CAS —6? 3

(4) In a certain melting process, a material called 'coke' is put into the furnace along with other materials. Coke is also used as fuel to heat the furnace. How will you treat the cost of coke in the final product according to Cost Accounting Standards? 3

Answer:

II. (d) (1)

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

II. (d) (2)

(i) Opportunity Cost is the value of the befit forgone by not doing the next best option.
e.g. Opportunity Cost of product A = Value of contribution (or profit) foregone by not making B, or C, or D, whichever has the highest contribution per unit.
Since resources are normally limited, there is some benefit foregone. If there is no constraint then, the opportunity cost is zero.

(ii) Relevant Cost: 'relevance' of cost arises only with respect to a specific purpose in the context of a decision. A cost has to change if the decision is one way or other. A cost, even if variable with respect to the cost object and is out of pocket and to be incurred in future, can be irrelevant if it is the same across the alternatives concerned.
e.g. If the raw material cost removes the same for each unit of A, B, C, or D, then, it is not relevant to decide whether to produce A or B or C or D. However, if the raw material is in short supply or is consumed in different quantities across A, B, C, & D, then Raw Material cost becomes relevant in choosing the alternative A or B or C or D to be produced.

(iii) Replacement Cost: This is also a cost concept used in decision making. The item to be casted is valued at the current market price at the landed cost, if it were to be purchased.
e.g. If product A is manufactured out of existing raw material stock and product D requires purchase of material R we need to substitute replacement cost of R for A's consumption so that products A and D are compared appropriately for their profits.

II. (d) (3)

As per CAS – 6, Self manufactured item shall valued at DM + DL + DE + F.OH + Ad.OH (production)
= 120 + 80 + 20 + 20 + 15 + 12 = ₹267
For an item to be called material cost under CAS – 6. It has to be significant and economically traceable to the cost object, otherwise it is an indirect material and classified as an overhead of production.
Component A is significant, bring 267/600 = 44.5% of the sale value of B. Hence it is DM under CAS – 6.

II. (d) (4)

Cost of Coke to the extent it is put into the furnace, subject to if being significant in value compared to other raw materials and measurable, should be taken as raw material cost under CAS. If it is insignificant in quantity or value, it should be taken as production overhead.

The quantity and value of coke used as fuel should be treated as indirect material and classified as production overhead.

III. Answer any two sub-divisions from (a) to (c): 16×2= 32

(a) (1) The following accounting information and financial ratios of Bhalu Ltd. relate to the year ended 31st March, 2015:

Inventory Turnover Ratio (considering cost of goods sold)	**6 times**
Creditors Turnover Ratio	**10 times**
Debtors Turnover Ratio	**12 times**
Current Ratio	**2.4**
Gross Profit Ratio	**25%**

Total sales ₹60 lakhs; cash sales 25% of credit sales; cash purchases ₹ 4,60,000; working capital ₹7,14,000; closing inventory is ₹1,60,000 more than opening inventory. You are required to calculate:

(i) Average Inventory
(ii) Purchases
(iii) Average Debtors
(iv) Average Creditors
(v) Average Payment Period
(vi) Average Collection Period
(vii)Current Assets
(viii) Current Liabilities **8**

(2) A company has earnings of ₹5,00,000. The capital structure of the company has debt and equity in which debt of ₹8,00,000 is borrowed at 10%. The cost of equity capital is currently 12.5%. Calculate the value of the firm and overall cost of capital by the net income approach. Ignore taxes. Take market value of debt at par. 4

(3) Explain the concepts of operating leverage and financial leverage. 4

Answer:

III. (a) (1)

(i) Computation of Average Inventory:

Gross Profit =25% of ₹60,00,000 = ₹15,00,000

Cost of goods sold (COGS) =₹60,00,000 - ₹15,00,000= ₹45,00,000

Inventory Turnover Ratio =COGS/Average Inventory

₹45,00,000/Average Inventory = 6

Average Inventory = ₹7,50,000

(ii) Computation of Purchases:
Purchases = COGS + Increase in Inventory = ₹45,00,000 + ₹1,60,000 = ₹46,60,000

(iii) Computation of Average Debtors:
Let credit sales be ₹100 then cash sales = 25% of 100 = ₹25, and total sales = ₹125

When total sales is ₹60 lakhs then credit sales = ₹60,00,000 × 100/125 = ₹48,00,000 and cash sales = ₹12,00,000
Debtors Turnover = Net Credit Sales/Average Debtors = 12
Average Debtors = ₹48,00,000 /12 = ₹4,00,000

(iv) Computation of Average Creditors:
Credit Purchase = Purchases ₹46,60,000 – Cash purchase ₹4,60,000 = ₹42,00,000
Creditors Turnover = Credit Purchases/Average Creditors
Average Creditors = ₹42,00,000/10 = ₹4,20,000

(v) Computation of Average Payment Period:
Average Payment Period = Average Creditors × 365/Credit Purchase
=₹4,20,000 × 365/ ₹42,00,000 = 36.5 days
Or 365/Creditors Turnover = 365/10 = 36.5 days

(vi) Computation of Average Collection Period:
Average Collection Period = Average Debtors × 365/Net Credit Sales
=₹4,00,000 × 365/ ₹48,00,000 = 30.417 days
Or 365/Debtors Turnover = 365/12 = 30.417

(vii + viii) Computation of Current Assets and Current Liabilities:
Current Ratio = Current Assets / Current Liabilities =2.4
Let Current Liabilities be 'a' then Current Assets will be '2.4a' and Working Capital = 2.4a -a = 1.4a
If working capital is ₹7,14,000
Then Current Liabilities = ₹7,14,000 /1.4 = ₹5,10,000
Current Assets = ₹5,10,000 × 2.4 = ₹12,24,000

III. (a) (2)

Computation of Value of the firm:

	₹
EBIT	5,00,000
Less: Interest on ₹8,00,000 @ 10%	80,000
Earnings for shareholders	4,20,000
K_e = Cost of Equity Capital	12.5%
Market value of equity	33,60,000
Market value of debt	8,00,000
Value of the firm	41,60,000

Overall cost of capital $\frac{₹5,00,000}{₹41,60,000}$ = 12.02% or 12.019% %

III. (a) (3)

Operating Leverage:

It is a measure that reflects the impact of change in sales on the level of operating profits of the firm.

Degree of Operating Leverage (DOL)= $\frac{\text{Contribution}}{\text{Earninge beforeInterest and Taxes}}$

There is a DOL for each level of output.

Financial Leverage:
Financial Leverage is the percentage increase in Earning Per Share (EPS) associated with a given percentage increase in the level of EBIT.

Degree of Financial Leverage (DFL) = $\frac{\text{EBIT}}{\text{EBT}}$

(b) (1) The following balances are provided by M Ltd. for the years ended 31st March, 2014 and 2015:

Particulars	31.03.2014	31.03.2015
General Reserve	2,40,000	2,90,000
Profit & Loss A/c	4,20,000	6,00,000
11 % Debentures	10,00,000	6,00,000
Goodwill	2,00,000	1,60,000
Land & Building	14,00,000	13,00,000
Plant & Machinery	12,00,000	13,20,000
Investment (Non trading)	4,80,000	4,40,000
Creditors	3,70,000	4,30,000
Provision for tax	1,60,000,	2,10,000
Proposed Dividend	2,72,000	2,88,000
Stock	8,00,000	7,70,000
Debtors	5,76,000	8,30,000
Cash at Bank	1,76,000	1,86,000
Prepaid Expenses	30,000	22,000

Additional Information:

1. **Investment were sold during the year for ₹70,000.**
2. **During the year an old machine costing ₹1,60,000 was sold for ₹72,000. Its written down value was ₹90,000.**
3. **Depreciation was charged on plant and machinery @ 20% on the opening balance.**
4. **There was no purchase or sale of land and building during the year.**
5. **Provision for tax made during the year was ₹1,92,000.**
6. **During the year premium on redemption of debentures written-off was ₹40,000.**

You are required to prepare a statement showing the net cash flow from operating activities. 8

(2) (i) Following are the details regarding two companies A Ltd. and B Ltd.:

Details	A.Ltd.	B.Ltd.
Internal Rate of Return	15%	5%

Cost of equity capital	**10%**	**10%**
Earnings per share	**₹8**	**₹8**

Calculate the value of an equity share of each of these companies according to Walter's model when dividend payout ratio is 75%
What should be each company's strategy to maximize the market value of its share? 4

(3) Write a short note on the Dividend Irrelevance Theory of Modigliani and Miller. 4

Answer:

III. (b) (1)

Statement Showing Net cash flow from Operating Activities for the year ended 31st March, 2015 of M Ltd.

Particulars	₹	₹
Profit & Loss A/c as on 31.03.2015		6,00,000
Less: Profit &Loss A/c as on 31.03.2014		4,20,000
		1,80,000
Add: Transfer to General Reserve (₹ 2,90,000 – 2,40,000)	50,000	
Provision for tax	1,92,000	
Proposed Dividend	2,88,000	5,30,000
Profit before tax		7,10,000
Adjustment for Depreciation:		
Land & Building	1,00,000	
Plant & Machinery	2,40,000	3,40,000
Profit on sale of Investment (₹70,000 - ₹40,000) **WN-2**		(30,000)
Loss on sale of Plant & Machinery		18,000
Goodwill written-off (₹ 2,00,000 – 1,60,000)		40,000
Premium on redemption of debentures written-off		40,000
Operating Profit before Working Capital Changes		11,18,000
W. C. Changes: Decrease in Prepaid Expenses		8,000
Decrease in Stock		30,000
Increase in Debtors		(2,54,000)
Increase in Creditors		60,000
Cash generated from Operations		9,62,000
Income Tax paid **WN-1**		(1,42,000)
Net Cash Inflow from Operating Activities		8,20,000

Working Notes:

Dr. Provision for Tax Account Cr.

Particulars	₹	Particulars	₹
To Bank A/c (Balancing figure)	1,42,000	By Balance b/d	1,60,000
To Balance c/d	2,10,000	By Profit & Loss A/c	1,92,000
	3,52,000		3,52,000

Investment Account

Dr. **Cr.**

Particulars	₹	Particulars	₹
To Balance b/d	4,80,000	By Bank A/c (sale)	70,000
To Profit & Loss A/c (profit)	30,000	By Balance c/d	4,40,000
	5,10,000		5,10,000

III. (b) (2)

When DP ratio is 75%, Dividend per share is 75% of ₹ 8 = ₹6 per share

Value of an equity share = $\frac{D+(r/k)\times(E-D)}{k}$

Computation of value per share:

Particulars	A Ltd.	B Ltd.
When D/P ratio 75% =	[6 + 0.15 / 0.10 × 2]/ 0.10 ₹90	[6 + 0.05 / 0.10 × 2]/ 0.10 ₹70

Inference:

A Ltd: A Ltd. is treated as Growth firm. IRR exceeds cost of capital. When (r) retained earnings exceeds capitalisation rate (k) the market value per share increases and D/P ratio decreases. The market value per share will be maximum when it retains all its earnings without distributing any dividend. The optimum payment ratio is 0

B Ltd: B Ltd; is treated as a decline firm. IRR is less than cost of capital. In case of declining firms, where r is less than k, the market value per share increases as D/P ratio increases. It is beneficial to the company if it distributes the earnings to its shareholders.
The market value per share will be maximum when it declares 100% dividend without retaining its earnings optimum D/P ratio is 100% .

III. (b) (3)

Dividend Irrelevance Theory of Modigliani and Miller: This model explains the irrelevance of the dividend policy. When profits are used to declare dividends, the market price increases. At the same time there is a fall in the reserves for reinvestment. Hence for expansion, the company raises additional capital by issuing new shares; increase in the overall number of shares will lead to a fall in the market price per share. Hence the shareholders will be indifferent towards the dividend policy.

Modigliani and Miller stated the reason: The value of the Firm is determined by its basic earnings power and its risk class, and therefore, the Firm's value depend on its asset investment policy rather than on how earnings are split between dividends and retained earnings.

(c) (1) S. Ltd. produces a product with the following revenue-cost structure:

	₹ per unit
Raw Material	**115**
Direct labour	**80**
Overheads	**37**
Total cost	**232**
Profit	**58**
Selling Price	**290**

The following additional information is available:

(i) Average raw materials in stock: one month

(ii) Average work in-process: half-a-month—Raw Materials 100%, Direct labour 50%, Overheads 50% complete

(iii) Average finished goods in stock: one month

(iv) Credit allowed by suppliers: one month

(v) Credit allowed to debtors: two months

(vi) Time lag in payment of wages: half-a-month

(vii) Overheads: one month

(viii) One-fourth of sales are on cash basis

(ix) Cash balance is expected to be ₹ 1,65,000

You are required to prepare a statement showing the Working Capital requirement of the company to finance a level of activity of 60,000 units of annual output. Assume uniform production throughout the year. Wages and overheads accrue uniformly. Debtors are to be taken at cost. 12

(2) M/s. Progressive Co. Ltd. is considering an investment in Machine X. The cash flows expected are as under:

Initial Outflow (in lakhs ₹) Cost of Machine	Cash in flows (in lakhs ₹) At the end of				
	1st year	2nd year	3rd year	4th year	5th year
30	-	10	15	12	16

The cost of capital is 10% p. a. PV of ₹1 at 10% from year one to five:

End of year	1	2	3	4	5
P/V factor:	.91	.83	.75	.68	.62

Advise the Management whether the machine may be bought using the Net Present Value Method. 4

Answer:

III. (c) (1)

Statement showing estimate of Working capital

Particulars	₹	₹
Current Assets:		
Stock of Raw material (60,000 units × 115 × 1/12)		5,75,000
Work-in-progress:		
Raw materials (60,000 units × 115 × 1/12 × ½)	2,87,500	
Direct labour (60,000 units x 80 x 1/12 × 1/2 × 1/2)	1,00,000	
Overheads (60,000 units × 37 × 1/12 × 1/2 × 1/2)	46,250	4,33,750
Stock of finished goods (60,000 units × 232 × 1/12)		11,60,000
Debtors (60,000 units × ¾ × 232 × 2/12)		17,40,000
Cash balance		1,65,000
	(a)	40,73,750

Current Liabilities:		
Creditors for raw material (60,000 units × 115 × 1/12)		5,75,000
Creditors for wages (60,000 units × 80 × 1/12 × 1/2)		2,00,000
Creditors for overheads (60,000 units × 37 × 1/12)		1,85,000
	(b)	9,60,000
Net Working Capital	(a) – (b)	31,13,750
Total Working Capital Requirement		**31,13,750**

III. (c) (2)

MACHINE 'X' (₹ in Lakhs)

Year	Cash in Flow	P/V factor	P/V (₹)
1	-	0.91	-
2	10	0.83	8.30
3	15	0.75	11.25
4	12	0.68	8.16
5	16	0.62	9.92
			37.63
Less: Investment		-	30.00
		+Ve	7.63

NPV is +Ve, hence machine X can be bought.