Reg. No.										

Manipal Institute of Technology, Manipal

(A Constituent Institute of Manipal University)

I SEM M.TECH (ENGINEERING MANAGEMENT)

END SEMESTER EXAMINATIONS, NOV/DEC 2015

SUBJECT: FINANCIAL MANAGEMENT AND MANAGERIAL DECISIONS [HSS-519]

REVISED CREDIT SYSTEM

Time: 3 Hours MAX. MARKS: 50

Instructions to Candidates:

- Answer **ANY FIVE FULL** questions.
- Missing data may be suitably assumed.
- Use of Interest table is permitted.

1A. You are a financial analyst for Damon Electronics Company. The director of capital budgeting has asked you to analyze two proposed capital investments, Projects X and Y. Each project has a cost of $10,000, and the cost of capital for each project is 12%. The projects' expected net cash flows are as follows: **(3+3)**

	Expected Net Cash Flows	
Year	**Project X (in $)**	**Project Y (in $)**
0	(10,0000)	(10,0000)
1	6,500	3,500
2	3,000	3,500
3	3,000	3,500
4	1,000	3,500

Calculate each projects' payback period and net present worth.

Project X: Payback Period: 2.17 years. NPV = 1325.39

Project Y: Payback Period: 2.86 years. NPV = 1094.53

1B. Journalise the following transactions for the year ending Dec 2000. **(04)**

Dec. 1, Ajit started business with Cash Rs 40,000.
Dec. 3, he paid into the Bank Rs 2,000.
Dec. 5, he purchased goods for cash Rs 15,000.
Dec. 8, he sold goods for cash Rs 6,000.
Dec. 10, he purchased furniture and paid by cheque Rs 5,000.
Dec. 12, he sold goods to Arvind Rs 4,000.
Dec. 14, he purchased goods from Amrit Rs 10,000.
Dec. 15, he returned goods to Amrit Rs 5,000.
Dec. 16, he received from Arvind Rs 3,960 in full settlement.

Dec. 18, he withdrew goods for personal use Rs 1,000.
Dec. 20, he withdrew cash from business for personal use Rs 2,000.
Dec. 24, he paid telephone charges Rs.1,000.
Dec. 26, cash paid to Amrit in full settlement Rs 4,900.
Dec. 31, paid for stationary Rs 200, rent Rs 500 and
Dec. 31, Paid salaries to staff Rs 2,000.
Dec. 31, goods distributed by way of free samples Rs 1,000.

JOURNAL

Sl. No.	Date	Particulars		Nature of Account	L.F.	Debit Rs	Credit Rs
1.	Dec. 1	Cash A/c	Dr.	Real A/c		40,000	
		To Capital A/c		Personal A/c			40,000
		(Being commencement of business)					
2.	Dec. 3	Bank A/c	Dr.	Personal A/c		20,000	
		To Cash A/c		Real A/c			20,000
		(Being cash deposited in the Bank)					
3.	Dec. 5	Purchases A/c	Dr.	Real A/c		15,000	
		To Cash A/c		Real A/c			15,000
		(Being purchase of goods for cash)					
4.	Dec. 8	Cash A/c	Dr.	Real A/c		6,000	
		To Sales A/c		Real A/c			6,000
		(Being goods sold for cash)					
5.	Dec. 10	Furniture A/c	Dr.	Real A/c		5,000	
		To Bank A/c		Personal A/c			5,000
		(Being purchase of furniture, paid by cheque)					
6.	Dec. 12	Arvind	Dr.	Personal A/c		4,000	
		To Sales A/c		Real A/c			4,000
		(Being sale of goods)					
7.	Dec. 14	Purchases A/c	Dr.	Real A/c		10,000	
		To Amrit		Personal A/c			10,000
		(Being purchase of goods from Amrit)					
8.	Dec. 15	Amrit	Dr.	Personal A/c		5,000	
		To Purchases Returns A/c		Real A/c			5,000
		(Being goods returned to Amrit)					
9.	Dec. 16	Cash A/c	Dr.	Real A/c		3,960	
		Discount A/c	Dr.	Nominal A/c		40	
		To Arvind		Personal A/c			4,000
10.	Dec. 18	Drawings A/c	Dr.	Personal A/c		1,000	
		To Purchases A/c		Real A/c			1,000
		(Being withdrawal of goods for personal use)					
11.	Dec. 20	Drawings A/c	Dr.	Personal A/c		2,000	
		To Cash A/c		Real A/c			2,000
		(Being cash withdrawal from the business for personal use)					
12.	Dec. 24	Telephone Expenses A/c	Dr.	Nominal A/c		1,000	
		To Cash A/c		Real A/c			1,000
		(Being telephone expenses paid)					
13.	Dec. 26	Amrit	Dr.	Personal A/c		5,000	
		To Cash A/c		Real A/c			4,900
		To Discount A/c		Nominal A/c			100
		(Being cash paid to Amrit and he allowed Rs 100 as discount)					
14.	Dec. 31	Stationery Expenses	Dr.	Nominal A/c		200	
		Rent A/c	Dr.	Nominal A/c		500	
		Salaries A/c	Dr.	Nominal A/c		2,000	
		To Cash A/c		Real A/c			2,700
		(Being expenses paid)					
15.	Dec. 31	Advertisement Expenses A/c	Dr.	Nominal A/c		1,000	
		To Purchases A/c		Real A/c			1,000
		Being distribution of goods by way (of free samples)					
		Total				1,21,700	1,21,700

2A. Mr. Kiran's chocolate Wiggly bars pass through two processes. The data for the month just ended are: **(06)**

Process I

	$	Kg
Ingredients	5000	4000
Labour and overhead	6000	

Process II

	$
Packaging	10000
Labour and overhead	9000

Mr. Kiran allows the staff to eat 5% of the chocolate as they work on Process I. There was no work in progress at the month end. There is a heatwave and staff have eaten less chocolate. At the end of Process I, 3,810 units are transferred to Process II. Prepare the two process accounts and calculate the cost per kg.

Process 1 account

	kg	$		kg	$
Ingredients	4,000	5,000	Normal loss	200	
Labour and overheads		6,000	Transfer to Process 2 (W2)	3,810	11,029
Abnormal gain (W1+2)	10	29			
	4,010	11,029		4,010	11,029

Workings

(1) As the T account should balance, the abnormal gain = 4,010kg – 4,000kg = 10kg

(2) Cost per kg = $\frac{\text{Costs incurred}}{\text{Expected output in kgs}} = \frac{11,000}{4,000 \times 95\%} = \$2.89$

Cost of units transferred to Process 2 = $2.89 × 3,810 = $11,029

Process 2 account

	kg	$		kg	$
Transfer from Process 1 (above)	3,810	11,029	Finished goods (balancing figure)	3,810	30,029
Packaging		10,000			
Labour and overheads		9,000			
	3,810	30,029		3,810	30,029

Cost per kg = $\frac{\$30,029}{3,810} = \$7.88/kg$

2B. A $1000 utility bond with 14 years remaining before the maturity can now be purchased for $760. It pays interest of $20 in each six month period. What rate of return is earned by purchasing the bond at the current market price plus a brokerage charge of $20? **(04)**

Trying $i = 5$ percent compounded semiannually, or 2½ percent per period for 28 periods, gives

$$PW = \$1000(P/F, 2\tfrac{1}{2}, 28) + \$20(P/A, 2\tfrac{1}{2}, 28) - (\$760 + \$20) \stackrel{?}{=} 0$$
$$= \$1000(0.50089) + \$20(19.96489) - \$780 = \$120.19 > 0$$

which indicates that i should be greater than $2\frac{1}{2}$ percent. When we try $i = 6$ percent compounded semiannually, we get

$$PW = \$1000(P/F, 3, 28) + \$20(P/A, 3, 28) - \$780 \stackrel{?}{=} 0$$
$$= \$1000(0.43708) + \$20(18.76411) - \$780 = \$32.36 > 0$$

$$i = 3\% + (4\% - 3\%)\frac{\$32.36 - \$0}{\$32.36 - (-\$113.28)} = 3.2\%$$

which means that the bond purchased for $780 will earn 6.4 percent compounded semiannually.

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3A. A company's overheads have been allocated and apportioned to its five production cost centres as shown below. **(06)**

	A	B	C	D	E
Apportioned and Allocated overhead ($)	80,000	100,000	10,000	20,000	4,000

Usage of service cost centres is as follows:

	A	B
Use of C's services	40%	60%
Use of D's services	75%	25%
Use of E's services	30%	70%

Using simultaneous equation method calculate the total overheads of production cost centres.

Let:
A = the total overhead $ apportioned to department A
B = the total overhead $ apportioned to department B, etc

Then:
A = 80,000 + 0.40 C + 0.75 D + 0.30 E
B = 100,000 + 0.50 C + 0.20 D + 0.70 E
C = 10,000 + 0.05 D
D = 20,000 + 0.10 C
E = 4,000

Substituting the D equation into the C equation:
C = 10,000 + 0.05 (20,000 + 0.10 C)

Multiplying out the bracket:
C = 10,000 + 1000 + 0.005 C

Collecting terms:
0.995 C = 11,000
C = 11,055.3

Substituting into the D equation:
D = 20,000 + 0.10 × 11,055.3
D = 21,105.5

Finally, plugging these values into the equations for A and B, the total overhead apportioned to each of the production cost centres is:

A = 80,000 + 0.40 × 11,055.3 + 0.75 × 21,105.5 + 0.3 × 4,000
A = 101,451.2

B = 100,000 + 0.50 × 11,055.3 + 0.20 × 21,105.5 + 0.7 × 4,000
B = 112, 548.8

These results, as they should be, are quite close to the repeated distribution approach.

3B. ABC Company plans to produce an array of plastic pails during the upcoming budget year, all of which fall into the general Product A category. Its production needs are given in the table below. Prepare production budget for each quarters. **(04)**

(in Units)	**Quarter 1**	**Quarter 2**	**Quarter 3**	**Quarter 4**
Sales forecast	5,500	6,000	7,000	8,000
Beginning inventory	1,000	500	500	500
Planned ending inv. units	500	500	500	500

Units to be produced: Q1 = 5000, Q2 = 6000, Q3 = 7000, Q4 = 8000

4A. You have been provided with the financial information of M/s Aditya Mills Ltd for the given year. **(06)**

Balance Sheet as on December 31, 2010

Liabilities	**Rs.**	**Assets**	**Rs.**
Share Capital	10,00,000	Plant and Equipment	6,40,000
Retained Earnings	3,68,000	Land and Buildings	80,000
Sundry Creditors	2,04,000	Cash	2,60,000
Bills Payable	4,00,000	Sundry Debtors	4,20,000
Other current liabilities	50,000	Stock	6,22,000
Total	20,22,000	Total	20,22,000

Statement of profits for the year ended Dec 31, 2010.

Particulars	**Amount (Rs)**
Sales	40,00,000
Cost of Goods Sold	30,80,000
Gross Profit	10,20,000
Operating Expense	8,80,000
Net Profit	4,20,000
Taxes @ 50%	2,10,000
PAT	2,10,000

Sundry debtors and the stock at the beginning of the year was Rs 3,00,000 and Rs 4,00,000 respectively.

Determine the following ratios:

i. Acid Test ratio,

ii. Stock turnover ratio,

iii. Debtors turnover ratio,

iv. Gross Profit turnover ratio

v. Net Profit turnover ratio.

4B. A factory uses a job costing system. The following data are available from the books at the year ending on 31st March 2007. **(04)**

Particulars	Amount (Rs)
Direct Materials	18,00,000
Direct Wages	15,00,000
Profit	12,18,000
Selling and Distribution overheads	10,50,000
Administrative overheads	8,40,000
Factory overheads	9,00,000

You are required to prepare a job cost sheet showing the prime cost, factory/w orks cost, production cost, cost of sales and sales value.

Particulars	Amount [Rs.]	Amount [Rs.]
Direct Costs: - Direct Materials	18,00,000	
Direct Labor	15,00,000	
Prime Cost [Direct Materials + Direct Labor]		33,00,000
Factory Overheads		9,00,000
Factory/Works Cost [Prime Cost + Factory Overheads]		42,00,000
Administrative Overheads		8,40,000
Cost of Production [Factory Cost + Adminis-trative Overheads]		50,40,000
Selling and Distribution Overheads		10,50,000
Cost of Sales [Cost of Production + Selling and Distribution Overheads]		60,90,000
Profit [As Given]		12,18,000
Sales [Cost of Sales + Profit]		73,08,000

% of Factory Overheads to Direct Wages: Rs.9,00,000/15,00,000 × 100 = 60%

% of Administrative Overheads to Works Cost: Rs.840,000/420,0000 × 100 = 20%

% of Selling and Distribution Overheads to Works Cost: Rs.10,50,000/42,00,000 × 100 =25%

5A. From the following balances of a company for the year ending 31/03/2011. Prepare final accounts with adjustment enteries. **(06)**

Particulars	Debit Amount (Rs)	Credit Amount (Rs)
Opening stock	2,10,000	
Purchases	6,45,000	
Sales		10,20,000
Purchase return		500
Sales return	2,000	
Wages	17,000	
Carriage inwards	21,000	
Furniture	1,32,000	
Syndicate bank loan		4,00,000
Computer setup	92,000	
Motor car	2,40,000	
Canara bank vehicle loan		1,65,000
Machinery	5,10,000	
Interest on loan	51,000	
Salary	62,000	
Printing & Stationary	6,000	
Travelling expenses	17,500	
Fixed SB deposit	20,000	
Interest on deposit		1,800
Discount received		1,000
Rent paid	11,000	
Insurance	7,000	
Drawings	42,000	
Capital		4,97,200

Adjustments:

i. Wages outstanding Rs. 3000.
ii. Interest due for loan Rs. 18500.
iii. Salary outstanding Rs. 10000.
iv. One month rent due of Rs. 1000.
v. Prepaid insurance Rs.1000.
vi. Closing stock as on march 31st is Rs. 325000

Solution:

Dr. **Trading Account** **Cr.**

Particulars	Amount	Amount	Particulars	Amount	Amount
To Opening stock		2,10,000	By sales	10,20,000	
To purchases	6,45,000		Less return	2,000	10,18,000
Less Returns	500	6,44,000			
To wages	17,000		By closing stock		3,25,000
Add outstanding	3000	20,000			

To carriage inwards		21,000			
To gross profit		4,47,500			
Total		**13,43,000**	**Total**		**13,43,000**

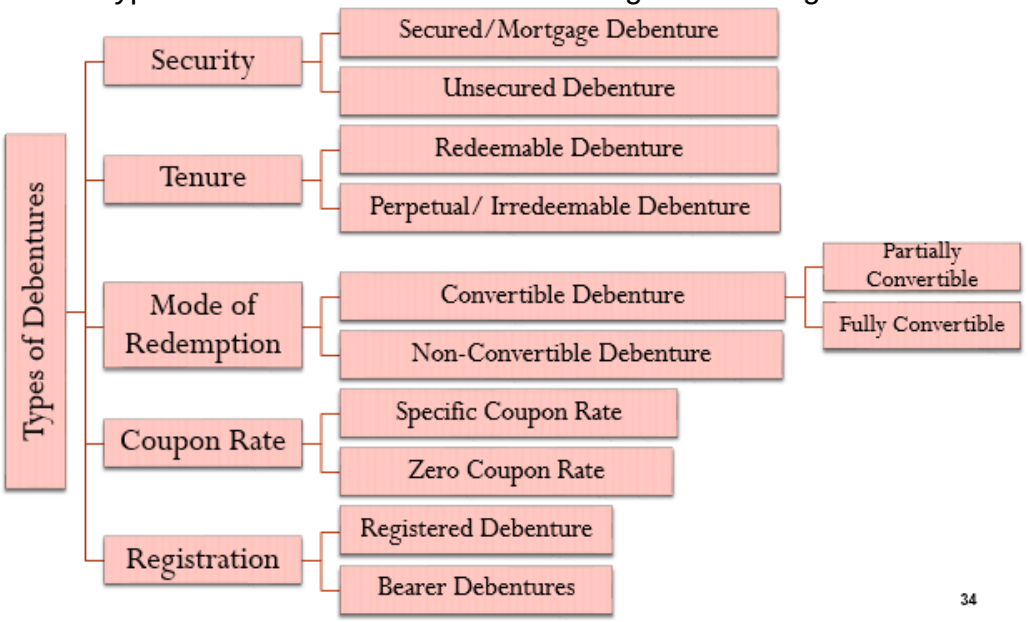
Dr. **Profit & Loss Account** **Cr.**

Particulars	Amount	Amount	Particulars	Amount	Amount
To Interest on loan	51,000		By interest on deposit		1800
Add outstanding	18,500	69,500	By discount received		1000
To salary	62,000		By gross profit		4,47,500
Add salary outstanding	10,000	72,000			
To Printing		6,000			
To office expenses		17,500			
To rent paid	11,000				
Add outstanding	1000	12,000			
To insurance	7000				
Less prepaid insurance	1000	6000			
To net profit		2,67,300			
Total		**4,50,300**	**Total**		**4,50,300**

Balance Sheet

Liabilities	Amount	Amount	Assets	Amount	Amount
Capital	4,97,200		Furniture		1,32,000
Less Drawings	42,000	4,55,200	Computer		92,000
Bank Loan		4,00,000	Motor car		2,40,000
Vehicle loan		1,65,000	Machinery		5,10,000
Outstanding:			SB Deposit		20,000
Wages	3000		Prepaid insurance		3,25,000
Loan interest	18,500		Closing stock		3,25,000
Salary	10,000				
Rent	1000	32,500			
Net profit		2,67,300			
Total		**13,20,000**	**Total**		**13,20,000**

5B. List the types of debentures and the advantages of issuing a debentures for a company. **(2+2)**



Company's point of view

Advantages
Specific cost of debt capital is lower. Because interest on tax deductible.
Does not result in dilution of control.
Monetary burden associated with debenture is fixed.

6A. From the following data prepare a cash budget for the three months commencing 1st June, 1996, when the bank balance was Rs.1 Lakhs. **(05)**

Month (1996)	Sales (Rs)	Purchases (Rs)	Wages (Rs)	Production Expenses (Rs)	Administrative Expenses (Rs)
April	80,000	41,000	5,600	3,900	10,000
May	76,500	40,500	5,400	4,200	14,000
June	78,500	38,500	5,400	5,100	15,000
July	90,000	37,000	4,800	5,100	17,000
August	95,000	35,000	4,700	6,000	13,000

There is two month credit period allowed to customers and received from suppliers. Wages, production expenses and administration expenses are payable in the following month.

Cash budget from June to August 1996

	June	*July*	*August*
Opening balance	1,00,000	1,15,400	1,25,900
Add: Receipts:			
Collection from debtors	80,000	76,500	78,500
	1,80,000	1,91,900	2,04,400
Less: Payment			
paid to creditors	41,000	40,500	38,500
wages	5,400	5,400	4,800
Production expenses	4,200	5,100	5,100
Administration expenses	14,000	15,000	17,000
	64,600	66,000	65,400
Closing balance	1,15,400	1,25,900	1,39,000

Note 1:

Delay in payment allowed to customers from suppliers is 2 months *i.e.*, April payment paid in June.

Note 2:

Delay in payment allowed to wages, production expenses, administration expenses are one month *i.e.*, May payment paid in June.

6B. Answer the following, **(03)**

i. What is the value of a 10 year, $1,000 par value bond with a 10% annual coupon if the required rate of return is 10%?

$$V_B = \frac{\$100}{(1+r_d)^1} + \ldots + \frac{\$100}{(1+r_d)^{10}} + \frac{\$1{,}000}{(1+r_d)^{10}}$$
$$= \$90.91 + \ldots + \$38.55 + \$385.54 = \$1{,}000.$$

The bond consists of a 10-year, 10% annuity of $100 per year plus a $1,000 lump sum payment at t = 10:

PV annuity	**= $ 614.46**
PV maturity value	**= 385.54**
Value of bond	**= $1,000.00**

ii. For a 13% coupon bond that is otherwise identical to the bond described in question (i)? Would we now have a discount or a premium bond?

Price of 13% coupon bond = $1,184.34.

When the coupon rate exceeds the bond's required rate of return, r_d, the bond's value rises above par, and sells at a premium

iii. What is the yield to maturity on a 10-year, 9%, annual coupon, $1,000 par value bond:

a. That sells for $887.00
b. That sells for $1,134.20

F = $887 P = $1000 n = 10 years I = $90

The YTM is found to be 10.91%.

F = $1134.20 P = $1000 n = 10 years I = $90

The YTM is found to be 7.08%.

6C. Briefly explain the features of preference shares?

Cumulation of dividends: Preference share may be cumulative or non-cumulative w.r.t. dividends.

Callability: Here the issuing company enjoys the right to call the preference share, wholly or partly at a certain price.

Convertibility: The holders of convertible preference shares enjoy the option of converting preference shares into equity shares at a specified period.

Redeemability: Preference share may be perpetual or redeemable. **(02)**

Perpetual- has no maturity period

Redeemable – has a limited life after which will be matured.

Voting power: Preference shares do not carry voting rights. However shareholder is entitled to vote on every resolution if, Share is unpaid to 2 years or more in case of non cumulative share. The cumulative preference dividend has not yet been paid for a period of two or more consecutive years or for an aggregate period of 3 years.