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10ME71

Seventh Semester B.E. Degree Examination, Dec.2013 / Jan.2014

**Engineering Economy**

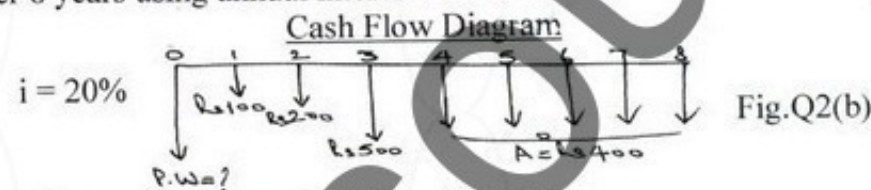
Time: 3 hrs.

Max. Marks:100

**Note: 1. Answer any FIVE full questions, selecting atleast TWO questions from each part.  
2. Use of discrete interest tables is permitted.**

**PART - A**

- 1 a. Distinguish between strategy and tactics with suitable examples. (05 Marks)
- b. Explain the law of demand and supply with suitable example. (05 Marks)
- c. Determine the effective interest rate for a nominal annual rate of 6% that is compounded i) Semi - annually ii) Quarterly iii) Monthly iv) Daily. (06 Marks)
- d. A person invests a sum of Rs 50,000/- in a Nationalized Bank at a Nominal interest rate of 18% for 15 years. The compounding is monthly. Find the maturity amount of the deposit after 15 years? (04 Marks)
- 2 a. State the conditions for present worth comparisons. (06 Marks)
- b. Determine the equivalent present worth of the following series of year and cash flows extending over 8 years using annual interest rate of 20%. (04 Marks)



- c. What do you understand by present worth by T2 rule? (03 Marks)
- d. An Entrepreneurs intending to start a New Business knows that the first few years are the most difficult. To Lessen the chance of failure a loan plan for start up capital is proposed in which interest paid during the first two years will be at 3%, 6%. For the next 2 years if 12% For the last 2 years of the 6 years loan. How large a loan can be justified for proposed repayments at the end of 2, 4 and 6 respectively for Rs 20,000/- , Rs 30,000 and Rs 50,000/- for 2<sup>nd</sup> , 4<sup>th</sup> and 6<sup>th</sup> year respectively. (07 Marks)
- 3 a. Two types of power converter Alpha and Beta are under consideration for a particular application. An economic comparison is to be made at an interest rate of 10%. Following cost estimation has been obtained. Determine the Annual Equivalent costs of the two systems, select the best converter. (10 Marks)

Cost Particulars	Alpha	Beta
Purchase price	Rs 10,000/-	Rs 25,000/-
Estimated service life	5 years	9 years
Salvage value	Rs 3,000/-	Rs 5,000/-
Annual operating cost	Rs 2500/-	Rs 1200/-

- b. A Conventional Agricultural Equipment has a service of 6 years. A newly designed equipment is 50% costlier than the conventional one but has many advantages. The operating costs of both these equipment are almost same and salvage value is negligible. What will be the service life of the New equipment that makes its cost comparable to that of the conventional one at  $i = 10\%$ ? (10 Marks)
- 4 a. Define the following terms : i) MARR ii) IRR iii) ERR. (06 Marks)
- b. Explain the causes for depreciation. (06 Marks)
- c. An XYZ company has purchased an equipment whose first cost is Rs 2,00,000 with an estimated life of 8 years. The estimated salvage value of the equipment is Rs 40,000 at the end of its life time. Determine the depreciation charge and book value at the end of various years using SOYD method. (08 Marks)



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**PART - B**

- 5 a. What are the different elements of cost? Explain. (04 Marks)  
 b. Differentiate between estimation and costing. (04 Marks)  
 c. From the following data related to manufacturing a standard product for the month of Sept – 2012, prepare a statement showing the cost and profit per unit. (12 Marks)
- |                                      |                                    |
|--------------------------------------|------------------------------------|
| 1. Raw Material used = 40,000        | 2. Direct wages = 24,000           |
| 3. Machine hours worked = 9,500 hrs  | 4. Machine hour rate @ Rs 4/hr     |
| 5. Office overhead 20% of works cost | 6. Selling overhead @ Rs 1/unit    |
| 7. Units produced = 20,000           | 8. Units sold 18,000 @ Rs 10/unit. |
- 6 a. What do you understand by the following Financial terms : (10 Marks)  
 i) Preferential shares ii) Assets iii) Liabilities iv) Sundry debtors v) Sundry creditors.  
 b. Following is the Financial status of a company as on 31<sup>st</sup> March 2005, prepare a Balance sheet as on 31<sup>st</sup> March 2005. (10 Marks)

Particulars	Amount (Rs)
Cash in hand	22,000
Sundry debtors	10,000
Bank loan's	40,000
Bill's payable	20,000
Equity shares	1,13,000
Land & Buildings	50,000
Plant & Machinery	90,000
Inventories	15,000
Creditors	30,000
Bank Balances	16,000

- 7 a. What is a Financial Ratio? Explain Liquidity and Solvency ratio's, mentioning their significance. (10 Marks)  
 b. Calculate the Current Assets of XYZ company, with the following information. (10 Marks)  
 i) Stock turnover = 5 times ii) Stock at the end = 5000 more than the stock at the beginning iii) Sales = Rs 2,00,000/- iv) Gross profit ratio = 20% v) Current liabilities = Rs 60,000 vi) Quick ratio = 0.75.
- 8 a. Briefly explain the objectives of profit planning. (05 Marks)  
 b. On 2006 June Abhilash Enterprises has Rs 10,000 cash balance. The expected sales are to the value of Rs 7,000/-, Rs 12,000/- and Rs 15,000/- respectively. It is estimated that the disbursement is to be made in 3 months are Rs 15,000/-, Rs 16,000/- and Rs 12,000/-. Whenever a shortage occurs Bank loan is assumed to be raised to a value of Rs 5,000/-. Prepare a cash budget and show the cash balance at the beginning of September. (08 Marks)  
 c. Prepare a purchase budget from the following particulars when the estimated price/kg is X – Rs 2, Y – Rs 3, Z – Rs 4.

Materials	Estimated consumption of Materials in kgs
X	1,00,000
Y	2,00,000
Z	2,50,000

Materials	Stock at the Beginning	Stock at the end Estimated
X	30,000	15,000
Y	40,000	20,000
Z	45,000	50,000

(07 Marks)

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