

TU Exam Papers - 2071

Production & Operations Management (MSC 502)

Attempt any NINE questions including Q.No. 11 which is compulsory.

1. Differentiate between 'production and productivity.' Discuss various internal and external environments affecting the production system. [10]
2. What is 'plant layout'? Explain various plant layout designs with suitable examples. [10]
3. What is ABC inventory system? A company uses annually 50,000 units of an item costing Rs.1.20. It operates 250 days in a year with no lead time. Each order costs Rs.45 and inventory carrying cost is 15% of the item cost. Find the optimum order quantity. [10]
4. What is aggregate planning? Describe the advantages and disadvantages of aggregate planning? [10]
5. What is just-in-time technique? Explain how JIT system helps in increasing competitiveness of the production system. [10]
6. What are the factors affecting productivity of an organization. Discuss how Kaizen system helps to improve the competitiveness. [10]
7. What is 'quality circle'? Describe ISO 9000 standard and its implications in quality management. [10]
8. Four factories A, B, C and D produces sugar and the demand of each warehouse X, Y, Z are given below: [10]

Ans: 5,000 units

Factories	Cost in Rs. per ton ('000)			Availability in tons
	X	Y	Z	
A	4	3	2	10
B	5	6	1	8
C	6	4	3	5
D	3	5	4	6
Requirement in tons	7	12	4	29
				23

Find the optimal solution for the least transportation cost.

Ans: Total minimum transportation cost = Rs. 65,000

9. Management of XYZ company is considering use of newly discovered chemical which, when added to detergents, will make the washing set, thus eliminating the necessity of adding softness. The management is considering at present time, hence alternatives S_1 , S_2 , S_3 select the optimal strategy using expected value criteria and expected loss method. [10]

Strategies	Pay off matrix state of nature		
	N_1	N_2	N_3
S_1 : New improved detergents	15	12	18
S_2 : Super soft	9	14	10
S_3 : Extra wash	13	4	26

If the probabilities are $N_1 = 0.35$; $N_2 = 0.45$ and $N_3 = 0.20$.

Ans: Minimum EOL = Rs. 2.1. The best alternative is S_1 : New improved detergents

10. Draw the network for project as below: [10]

Activities	A	B	C	D	E	F	G	H
Preceding activities	-	-	-	A	C	E	B,D,F	G
Estimated time (weeks)	4	2	5	2	6	1	2	8

Also determine the critical path and interpret the findings.

Ans: Critical path is C-E-F-G-H and critical; activities are C, E, F, G and H; Minimum time required to complete the project is 22 weeks.

11. The advertisement department of a certain firm wishes to plan its advertising strategy to reach certain minimum percentages of high and low income groups. Two alternatives are considered. Radio and Television. Radio advertising has an exposure for high income group of 2% per programme but only 1% exposure for low income group. Television on other hand expose 3% of low income group per show and only 1% of high income group per show. Radio advertising costs Rs.1,000 per programme and television Rs.4,000 per show. If firm wants a minimal exposure of 50% of high income group and 30% of low income group, what strategy should it use for minimizing advertising cost? Formulate the problem and solve it by using simple method. [20]

Ans: Min. Z = Rs. 30,000 at advertisement on radio = 30 and on television = 0

Strategic Management & Business Environment (Mgt. 505)

Group A: Strategic Management Short Answer Questions

Attempt any THREE questions.

[3×10=30]

1. What is strategic decision? Explain the various modes of strategic decision-making. [3+7]
2. Explain the components of remote and operating environment. How do you analyze external environment? [5+5]
3. Write short notes on benchmarking, robustness, and value chain analysis. [10]
4. Explain the various methods of strategy development? Explain. [10]
5. What is strategy evaluation? Explain the criteria of strategy evaluation. [3+7]

Comprehensive Answer questions

Attempt any ONE questions.

[20]

6. In strategy implementation, what organization structure will you select? What are the alternative organization structures available for the selected strategy? Explain. [10+10]
7. What are the alternative business strategies available to the business unit manager? Explain the strategic clock based business strategies. [10+10]

Group B: Business Environment Short Answer Questions

Attempt any THREE questions.

[3×10=30]

8. Why is the study of business environment essential? Explain the components of external business environment. [5+5]
9. What is corporate social responsibility? Explain the strategy of social responsibility. [3+7]
10. What is technology transfer? What is the status of technology in Nepalese industrial sector? [3+7]
11. Describe BIMSTEC and its role in the regional economic cooperation. [5+5]
12. Explain the roles and problems of multinational companies in the global business. [5+5]

Comprehensive Answer Questions

Attempt any ONE question.

[20]

13. Discuss the components of political environment that affect business organizations. Explain how government and business are related to one another. [10+10]
14. Explain the principles and function of WTO. Assess the impact of WTO on Nepalese economy. [10+10]

Entrepreneurship Development (Mgt. 506)

Group A: [Short Answer Questions]

Answer any THREE questions.

[3×10=30]

1. What are the emerging trends in entrepreneurship? Explain how such trend helpful in development entrepreneurship.
2. What is creativity? Explain the techniques of developing creativity.
3. Explain the legal provisions for establishment of a new venture in Nepal.
4. Explain any two thoughts of entrepreneurship.

5. What is entrepreneurial stress? Explain the sources of stress.

Group B: [Comprehensive Answer Questions]

Answer any ONE question.

[20]

6. What are the sources and methods of generating new ideas? Explain the marketing components while conducting feasibility study of a product.
7. Prepare a business plan to your client who is ready to invest in a new venture which would yield reasonable return in the competitive environment.

Capital Structure Management (FIN 632)

Group A: [Short Answer Questions]

Attempt any SIX questions.

[6×10=60]

1. Indicate whether the following statements are 'True or False'. Support your answer with reasons.
- Company should always take advantage of stretching accounts payable as it helps to reduce cost of trade credit.
 - Leasing often provides 100 percent financing.
 - Warrants typically sell at prices higher than their formula value.
 - Coupon rate on straight bond should be equal or lower than coupon rate of convertible bond.
2. Define capital structure. Explain the factors affecting capital structure decision of a firm.
3. What is venture capital? Discuss the various stages of venture capital financing.
4. Ilam Tea Company plans to raise an additional Rs. 10 million through rights offerings. Current market price of the company is Rs. 250. It has 200,000 shares outstanding. Stockholders are offered a new share at a price of Rs. 100 each. You are asked to answer following questions.
- How many new shares will have to be sold to raise required funds?
 - How many rights will be required to purchase a new share?
 - What will be theoretical value of a right?
 - What will be ex-rights price?
 - Jay Thapa's total assets consist of 100 shares of Ilam Tea Company and cash balance of Rs. 15,000. Prepare statements of Mr. Thapa's total assets before rights offerings.
 - Prepare statement showing Mr. Thapa's total assets after rights offering, if he exercises all his rights.

Ans: (a) 100,000 shares (b) 2 rights (c) Rs. 50 (d) Rs. 200 (e) Rs. 40,000 (f) Rs. 40,000

5. Sunrise Company has Rs. 50 million of 14 percent debentures outstanding, which are due in 25 years. The company could refund these bonds in the current market with new 25-year bonds, sold to the public at par (Rs. 1,000 per bond) with a 12 percent coupon rate. The spread to the underwriter is 1 percent, leaving Rs. 990 per bond in proceeds to the company. The old bonds have an unamortized discount of Rs. 1 million, unamortized legal fees and other expenses of Rs. 100,000, and a call price of Rs. 1,140 per bond (Rs. 114 on Rs. 100 face value convention). The tax rate is 40 percent. There is a 1-month overlap during which both issues are outstanding, and issuing expenses for new bonds are Rs. 200,000. Compute the present value of the refunding, using the after-tax rate on the new bonds as the discount rate. Is the refunding worthwhile?

Ans: Rs. 1,984,701.76

6. The common stock of the Delta Company earns Rs. 2.50 per share has a dividend payout of two-thirds, and sell at a P/E ratio of 16. The company wishes to offer Rs. 10 million of 9 percent, 20-year convertible debentures with an initial conversion premium of 20 percent and a call price of 105. The company currently has 1 million common shares outstanding and has a 50 percent tax rate.
- What is the conversion price?
 - What is the conversion ratio per Rs. 1,000 debenture?
 - What is the initial conversion value of each debenture?
 - How many new shares of common must be issued if all debentures are converted?

- e. If Delta can increase operating earnings by Rs. 1 million per year with the proceeds of the debenture issue, compute the new earnings per share and earnings retained before and after conversion.

Ans: (a) Rs. 48 (b) 20.833 shares (c) Rs. 833.30 (d) Rs. 208.330

7. The call option of a company has an exercise price of Rs. 20 and a maturity date six months from now. The stock price is Rs. 25. You have made a careful study of the stock's volatility and concluded that a standard deviation of 0.5 is appropriate for the next 6 months. Currently, the annual rate on short-term treasury bills is 5 percent. If the call option sells for Rs. 5.4, is the option overvalued, undervalued, or priced just right? Would you purchase the option?

Ans: RE = Rs. 833,000; Rs. 850,000; Rs. 1,000,000; EPS = Rs. 2.50; Rs. 2.55; Rs. 2.48

8. Write notes on (Any two):
- Binomial option pricing model
 - Operating lease
 - Dividend versus terminal value

Group B: [Comprehensive Answer Questions]

Attempt any TWO questions.

[2×20=40]

9. (a) Modigliani and Miller argue that capital structure changes do not affect value of the firm and cost of capital in the perfect capital market. State the arbitrage process to justify the argument. [12]
- (b) Alpha Company and Beta Company are identical except for capital structures. Alpha has 50 percent debt and 50 percent equity, whereas Beta has 20 percent debt and 80 percent equity. (All percentages are in market-value terms.) The borrowing rate for both companies is 8 percent in a no-tax world, and capital markets are assumed to be perfect.
- (1) If you own 2 percent of the stock of Alpha, what is your rupee return if the company has net operating income of Rs. 360,000 and the overall capitalization rate of the company is 18 percent? (2) What is the implied required rate of return on equity? [5+3]
 - Beta has the same net operating income as Alpha. (1) What is the implied required equity return of Beta? (2) Why does it differ from that of Alpha? [5+3]

Ans: (a) (1) Rs. 5,600 (2) 28% (b) (1) 20.5%

10. Public Feed Industry wishes to acquire a merchandised feed spreader that costs Rs. 80,000. The Company intends to operate the equipment for 5 years, at which time it will need to be replaced. However, it is expected to have a salvage value of Rs. 10,000 at the end of the fifth year. The asset will be depreciated on a straight-line basis (Rs. 16,000 per year) over the 5 year, and Public Feed is in a 30 percent tax bracket. Annual lease payment is Rs. 19,000 payable in advance. Two means for financing the feed spreader are available. A debt alternative carries an interest cost of 10 percent. Debt payments will be at the start of each of the 5 years using mortgage type of debt amortization.
- What is the cost of leasing?
 - What is the cost of owing?
 - Should the equipment be leased or purchased?
 - The appropriate discount rate for cash flows used in the analysis is the firm's after-tax cost of debt. Why? [8+8+2+2]

Ans: (a) Rs. 59,986 (b) Rs. 55,326

11. Suncoast Boats Company estimates that because of the seasonal nature of its business, it will require an additional Rs. 2 million of cash for the month of July. Suncoast Boats has the following 4 options available for raising the needed funds:

- Establish a 1-year line of credit for Rs. 2 million with a commercial bank. The commitment fee will be 0.5 percent per year on the unused portion, and the interest charge on the used funds will be 11 percent per annum. Assume that the funds are needed only in July, and that there are 30 days in July and 360 days in the year.
- Forgo the trade discount of 2/10, net 40, on Rs. 2 million of purchases during July.
- Issue Rs. 2 million of 30 day commercial paper at a 9.5 percent per annum interest rate. The total transactions fee, including the cost of a backup credit line, on using

commercial paper is 0.5 percent of the amount of the issue.
 Option 4. Issue Rs. 2 million of 60-day commercial paper at a 9 percent per annum interest rate, plus a transactions fee of 0.5 percent. Since the funds are required for only 30 days, the excess funds (Rs. 2 million) can be invested in 9.4 percent per annum marketable securities for the month of August. The total transactions cost of purchasing and selling the marketable securities is 0.4 percent of the amount of the issue.

- What is the rupees cost of each financing arrangement?
- Is the source with the lowest expected cost necessarily the one to select? Why or why not?
- What are advantages and disadvantages of short-term financing? [12+4+4]

Ans: (a) Cost of line credit = Rs. 27,500; Cost of trade credit = Rs. 40,816; Cost of commercial paper = Rs. 25,833; Net cost = Rs. 32,333

Investments Management (FIN 633)

Group A: [Short Answer Questions]

Attempt any SIX questions.

[60]

- What is market index? Discuss different approaches of calculating index with suitable examples. [4 + 6]
- Describe the role of investment bankers with reference to the Nepalese financial system? [10]
- State whether the following statements are true or false. Give reasons for your answer. [4×2.5]
 - The CAPM implies that investors require a higher return to hold highly volatile securities.
 - Short position investment strategy is less risky than long position strategy.
 - If the efficient market hypothesis holds, it implies that prices reflect all available information.
 - If a security is underpriced then that investor's expected rate of return is greater than the market capitalization rate.

Ans: (a) False (b) False (c) True (d) True

- Suppose that you sell short 500 shares of GB Telecom, currently selling for Rs. 40 per share, and give your broker Rs. 15,000 to establish your margin account.
 - If you earn no interest on the funds in your margin account, what will be your rate of return after one year if GB Telecom stock is selling at (i) Rs. 44; (ii) Rs. 40, (iii) Rs. 36? Assume that GB pays no dividends.
 - If the maintenance margin is 25%, how high can GB's price rise before you get a margin call?
 - Redo parts (a) and (b), now assuming that GB's dividend (paid at year end) is Re. 1 per share. [3+3+4]

Ans: (a) (i) -13.33% (ii) 0% (iii) 13.33% (b) Rs. 56 (c) -16.67%; -3.33%; 10%

- Consider a risky portfolio. The end-of-year cash flow derived from the portfolio will be either Rs. 70,000 or Rs. 200,000 with equal probabilities of .5. The alternative risk-free investment in T-bills pays 6% per year.
 - If you require a risk premium of 8%, how much will you be willing to pay for the portfolio?
 - Suppose that the portfolio can be purchased for the amount you found in (a). What will be the expected rate of return on the portfolio?
 - Now suppose that you require a risk premium of 12%. What is the price that you will be willing to pay?
 - Comparing your answer to (a) and (c), what do you conclude about the relationship between the required risk premium on a portfolio and the price at which the portfolio will sell? [4×2.5]

Ans: (a) Rs. 118,421.05 (b) 14% (c) Rs. 114,406.78

- The universe of available securities includes two risky stock funds, A and B, and T-bills. The data for the universe are as follows:

	Expected Return	Standard Deviation
A	10	20
B	30	60
T-Bills	5	0

The correlation coefficient between funds A and B is -0.2 .

- Draw the opportunity set of Funds A and B.
- Find the optimal risky portfolio, P, and its expected return and standard deviation.
- Find the slope of the CAL supported by T-bills and Portfolio P.
- How much will an investors with $A = 5$ invest in funds A and B and in T-bills? [4×2.5]

Ans: (b) $w_A = 0.6818$; $w_B = 0.3182$; $E(R_p) = 16.37\%$; $\sigma_p = 21.13\%$ (c) 0.54 (d) 0.5094

7. Alto stock currently sells for Rs. 40 per share. Six month from today the stock will be worth either Rs. 44.21 or Rs. 36.19. If the price rise to Rs. 44.21, then six months later the price will be either Rs. 48.86 or Rs. 40. If however, the price initially falls to Rs. 36.19, then six months later the price will be either Rs. 40 or Rs. 32.75. The continuously compounded risk free rate is 3.05% over each six month period. Based on the binomial option pricing model, what is the fair value for a call option on Alto's stock with one year to expiration? [10]

Ans: Rs. 3.2821

- Write notes on any TWO. [2×5]
- Security Board of Nepal
- Arbitrage pricing theory
- Efficient market hypothesis

Group B: [Comprehensive Answer Questions]

Attempt any TWO questions. [40]

- What is money market instrument? Discuss major features of money market instruments. For what type of investors are money market instruments attractive? [5+12+3]
- (a) Century Crop. issues two bonds with 20-year maturities. Both bonds are callable at Rs. 1,050. The first bond is issued at a deep discount with a coupon rate of 4% and a price of Rs. 580 to yield 8.4%. The second bond is issued at par value with a coupon rate of $8\frac{3}{4}\%$.
 - What is the yield to maturity of the par bond? Why is it higher than the yield of the discount bond?
 - If you expect rates to fall substantially in the next two years, which bond would you prefer to hold?
 - In what sense does the discount bond offer "call protection"? [4+4+2]

Ans: (i) 8.75% (ii) 4% bond

(b) Use the following Data.

Bond	Maturity years	YTM
W	1	8%
X	2	9
Y	3	10.5
Z	4	12

- Calculate the implied 1-year forward rate starting in year 2.
- Calculate the implied 1-year forward rate starting in year 3.
- Calculate the implied rate for a 3-year bond starting in year 2.
- Calculate the implied rate for a 2-year bond starting in year 3. [2.5×4]

Ans: (i) 10.01% (ii) 13.56% (iii) 13.337% (iv) 15.08%

- 11.(a) The Nepal Electronic Quotation System (NEQS) Corporation pays no cash dividend currently and is not expected to for the next five years. Its latest EPS was Rs. 10, all of which was reinvested in the company. The firm's expected ROE for the next five years is 20% per year, and during this time it is expected to continue to reinvested all of its earnings. Starting six years from now the firm's ROE on new investments is expected to fall to 15%, and the company is expected to start paying out 40% of its earning in cash dividends, which it will continue to do forever after. NEQS's market capitalization rate is 15% per year.
- What is your estimate of NEQS's intrinsic value per share?
 - Assuming its current market price is equal to its intrinsic value, what do you expected to happen to its price over the next year? The year after?
 - What effect would it have on your estimate of NEQS's intrinsic value if you expected

NEQS to pay only 20% of earnings starting in year 6?

[4+3+3]

Ans: (i) Rs. 98.97 (ii) 15% (iii) Rs. 197.9426

- (b) The stock of Almond Corporation is currently selling for Rs. 10 per share. Earnings per share in the coming year are expected to be Rs. 2. The company has a policy of paying out 50% of its earnings each year in dividends. The rest is retained and invested in projects that earn a 20% rate of return per year. This situation is expected to continue indefinitely.

- Assuming the current market price of stock reflects its intrinsic value as computed using the constant-growth DDM, what rate of return do Almond's investors require?
- By how much does its value exceed what it would be if all earnings were paid as dividends and nothing were reinvested?
- If Almond were to cut its dividend payout ratio to 25%, what would happen to its stock price? What if Almond eliminated the dividend?

[4+3+3]

Ans: (i) 20% (ii) Rs. 0

Financial Institutions and Markets (FIN 634)

Group A: Short Answer Questions

Attempt any SIX questions.

[6×10=60]

- Indicate whether the following statements are 'True or False', support your answer with reasons:
 - Increase in risk of financial securities shift supply curve up and to the left and increase equilibrium interest rate. [2.5]
 - Risk that promised cash flow from loan and securities held by financial institutions may not be paid in full is operational risk. [2.5]
 - Nepal Rastra Bank as a regulator requires commercial banks in Nepal to maintain 8 percent capital adequacy ratio as per international practice. [2.5]
 - Conventional mortgages guarantee loan repayment to the lending financial institutions, thereby protecting it against the possibility of default by borrower. [2.5]

Ans: (a) True (b) False (c) False (d) False

- Define financial system and explain flow of funds in a world with financial institutions. [4+6]
- Explain how social, economic, and demographic forces are affecting the financial system of markets and institutions. [10]
- Suppose that depository institutions have just received an additional Rs. 10 million in excess reserve from some source outside the banking system. Further assume that, for each Re of transaction deposits received, the public will convert Re. 0.25 into pocket money, and Re. 0.60 will be placed in time and saving deposits. Further suppose, depository institutions elect to hold Re 0.05 of every new checkable deposit Re received as excess reserve to protect against future contingency. The reserve requirement on transaction deposits is assumed to be 10 percent, and on time and saving deposits 3 percent. [3×3+1]
 - Calculate the transaction deposit multiplier.
 - Calculate money multiplier.
 - If all depository institutions continually make loans with this excess reserve, what will be the maximum amount of new deposits (loans) they can create?
 - Differentiate deposit multiplier from money multiplier.

Ans: (a) 2.3923 times (b) 2.9904 times (c) Rs. 23.923 million

- Suppose, an imaginary bank has assets of Rs. 10 million with a risk weight of zero, assets of Rs. 350 million with a 0.2 risk weight, assets of Rs. 680 million with a 0.5 risk weight, and assets of Rs. 1,010 million with a risk weight of 1.00. Further, suppose that this bank reports tier-one capital of Rs. 60 million and tier-two capital of Rs. 70 million. [2×5]
 - What is the total risk-weighted asset of this bank?
 - What is the tier-one capital ratio?
 - What is the tier-two capital ratio?
 - What is the total capital ratio?
 - Does the bank have enough total capital? Explain why or why not.

Ans: (a) Rs. 1,420 (b) 4.23% (c) 4.93% (d) 9.15%

6. A corporate bond has a current market price of Rs. 800 and will pay Rs. 100 in interest annually for 10 years. Its par value is Rs. 1,000. [4+4+2]
- What is its yield to maturity?
 - Suppose you purchased it and sold in five years for Rs. 900. What would your realized rate of return be?
 - State the assumptions of yield to maturity.
- Ans: (a) 13.81% (b) 14.38%
7. Mohan plans to purchase a house for Rs. 3,000,000 using a 30-year mortgage obtained from his local bank. The mortgage rate offered to him is 12 percent with zero point. In order to forgo the purchase of private mortgage insurance, he will make down payment of 20 percent of the purchase price at closing and borrow the remaining amount of the house through the mortgage.
- What will be the amount of down payment?
 - What will be the amount of mortgage loan?
 - What will be the monthly instalment of your mortgage?
 - How much total interest will he have paid at the end of 30 years? [2.5×4]
- Ans: (a) Rs. 600,000 (b) Rs. 2,400,000 (c) Rs. 24,686.71 (d) Rs. 6,487,215.6
8. Write notes on any TWO: [5×2]
- Pension fund
 - Debit card
 - Commercial paper

Group B: Comprehensive Answer Questions

- Attempt any TWO questions.** [2×20=40]
9. Explain the roles and objectives of central bank and discuss the tools used to contain inflation in the economy. [20]
10. ABC Bank Ltd. started its first day of operation with Rs. 6 million in capital. Rs. 100 million in checkable deposits are received. The bank issues a Rs. 25 million commercial loan and another Rs. 25 million in mortgages, with the following terms:
- Mortgages: 100 standard 30-year fixed rate mortgages with a nominal annual rate of 5.25 percent each for Rs. 250,000.
 - Commercial loan: 3-year loan, simple interest paid monthly at 0.75 percent per month.
 - If required reserves are 8 percent, what does the bank balance sheet look like? Ignore any loan loss reserves.
 - Suppose, deposit withdrawal is Rs. 20 million, what does the bank balance sheet look like?
 - What is the required reserve before withdrawal of Rs. 20 million deposits?
 - What is the excess reserve before withdrawal of Rs. 20 million deposits?
 - What is the required reserve after withdrawal of Rs. 20 million deposits?
 - What is the excess reserve after withdrawal of Rs. 20 million of deposits?
 - Does a deposit outflow bring about changes in other parts of bank balance sheet if it has ample reserves? [5+5+2×5]
- Ans: (a) B/S total = Rs 106 million (b) B/S total Rs. 86 million (c) Rs. 8 million (d) Rs. 48 million (e) Rs. 6.4 million (f) Rs. 29.6 million
11. Karnali Saving and Credit Cooperative holds Rs. 56 million in interest-rate sensitive assets and Rs. 135 million in interest-rate sensitive deposits and other liabilities. Its non-rate-sensitive liabilities and equity capital is Rs. 62 million.
- What is Karnali Saving and Credit Cooperative's total volume of non-rate-sensitive assets?
 - What is the size of Karnali Saving and Credit Cooperative's interest-sensitive GAP?
 - What is the GAP ratio for this cooperative?
 - If market interest rate rises from 6 percent to 6.25 percent, how much net interest income will this cooperative lose?
 - What would you recommend that this cooperative's management do?
 - What will happen to this thrift's NII if market rate declines from 6 percent to 5.75 percent? [4×4+2×2]
- Ans: (a) Rs. 141 million (b) - Rs. 79 million (c) 0.4148 (d) -Rs. 0.1975 million (f) Rs. 0.1975 million