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## St. Aloysius College (Autonomous) Mangaluru Semester I – P.G. Examination - M.Com January - 2023

## ACCOUNTING THEORY AND PRACTICE

Time: 3 hrs

Max Marks: 70

### SECTION - A

## Answer any FIVE questions out of seven questions.

 $(5 \times 4 = 20)$ 

- 1. Explain the nature of Accounting principles.
- 2. What are the approaches to Accounting theory?
- 3. Give the merits and demerits of Accounting Standards.
- 4. Discuss accounting as a language of business.
- 5. Differentiate between Monetary and Non Monetary assets?
- Explain the usefulness of cash flow statement.
- 7. Give the Meaning and types of financial statements.

#### **SECTION - B**

## Answer any FOUR questions out of six questions.

 $(4 \times 10 = 40)$ 

- 8. Explain in detail the basic accounting concepts.
- Explain the role of Accounting Standard Board and describe its scope and functions.
- Elaborate the procedure, for issuing accounting standards by ICAI and corporate compliance with the accounting standards.
- 11. Discuss the need for accounting information.
- 12. Discuss the qualitative characteristics of financial statements.
- 13. The following are the balances of Bhander Co. Ltd. as on 31 March 2021:

Debit	₹	Credit	₹
Premises	30,72,000	Share capital	40,00,000
Plant	33,00,000	12% Debentures	30,00,000
Stock	7,50,000	Profit and Loss A/c	2,62,500
Debtors	8,70,000	Bills Payable	3,70,000
Goodwill	2,50,000	Creditors	4,00,000
Cash and Bank	4,06,500	Sales	41,50,000
Calls in arrear	75,000	General reserve	2,50,000
Interim dividend	3,92,500	Bad debt provision	35,000
Purchases	18,50,000		
Preliminary expenses	50,000		
Wages	9,79,800		
General expenses	68,350		
Salaries	2,02,250		
Bad debts	21,100		
Debenture Interest paid	1,80,000		
x 1	1,24,67,500		1,24,67,500

#### Information:

- (a) Depreciate Plant by 15%
- (b) Write off ₹ 5,000 from Preliminary Expenses
- (c) Half-year's Debenture Interest due
- (d) Credit 5% Provision on Debtors for Doubtful Debts
- (e) Provide for Income Tax @ 50%
- (f) Stock on 31st March, 2021 was ₹ 9,50,000
- (g) A claim of ₹ 25,000 for workmen's compensation is being disputed by the company

Prepare Statement of Profit & Loss as per Statutory format along with the relevant notes to accounts of the company

## SECTION - C (Compulsory)

 $(1 \times 10 = 10)$ 

14. Following is the Balance sheet of M/S. A & B as on:

	1-1-2021	31-12-2021
	(₹)	(₹)
Liabilities : Creditors Bank Overdraft Loan from bank Share Capital	40000 25000 40000 125000 230000	44000 - 50000 153000 247000
Assets:		
Cash Debtors Stock Machinery Land Building	10000 30000 35000 80000 40000 35000	7000 50000 25000 55000 50000 60000
	230000	247000

### Additional information:

- a) During the year, a machine costing ₹ 10000 (total depreciation written off ₹ 3000) was sold for ₹ 5000
- b) The provision for depreciation against machinery as on 1<sup>st</sup> January 2021 was ₹ 25000 and on 31<sup>st</sup> December 2021 was ₹ 40000
- c) Net profit for the year 2021 amounted to ₹ 45000

Prepare the Cash flow Statement in accordance with Accounting Standard-3

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# St. Aloysius College (Autonomous) Mangaluru Semester I – P.G. Examination - M.Com January - 2023

## FINANCIAL MANAGEMENT AND INVESTMENT POLICY

Time: 3 hrs

Max Marks: 70

#### SECTION - A

Answer any FIVE questions out of seven questions.

(5×4=20)

- "Investment, financing and dividend decisions are inter- related". Explain
- Explain the various implications of wealth maximization
- Examine the factors influencing cost of capital
- 4. Critically evaluate MM approach of capital theory?
- 5. ABC Ltd. belongs to a risk class for which the appropriate capitalization rate is 10%. It currently has outstanding 5000 shares selling at ₹ 100 each. The firm is contemplating the declaration of dividend of ₹ 6 per share at the end of the current financial year. The company expects to have a net income of ₹ 50,000 and has a proposal for making new investment of ₹ 1,00,000. Show that under MM hypothesis the payment of dividend does not affect the value of the firm
- 6. A Company plans to issue 1000new shares of ₹ 100 each at par. The floatation cost are expected to be 5% of the share price. The Company pays a dividend of ₹ 10 per share initially and the growth in dividend is expected to be 5%. Compute the cost of new issue of equity shares. If the current market price of an equity share is ₹ 150, calculate the cost of existing equity share capital
- 7. A Company issues ₹ 10, 00,000, 10% redeemable debentures at a discount of 5%. The cost of flotation amount to ₹ 30,000. The debentures are redeemable after 10 years. Calculate cost of debenture before tax and after tax, tax rate of 50%.

#### SECTION - B

## Answer any FOUR questions out of six questions.

 $(4 \times 10 = 40)$ 

- Explain the factors influencing dividend policy
- Explain the factors influencing capital structure
- 10. What do you mean by financial leverage? How does it helps in magnifying revenue of a company?

Contd...2

The following information is available in respect of rate of return on investment, cost of capital, and earning per share of ABC Ltd. 11.

Rate of return:

- 1. 15%
- 2. 12%
- 3. 10%

Cost of capital- 12%

Determine the value of the shares using Gordon's model assuming that Earnings per share= ₹ 10

alue of the s	hares using Gordon's Dividend payout ratio	Retention ratio
	100	00
Α		20
В	80	60
С	40	

The capital structure of the ABC Ltd consists of equity share capital of ₹ 10,00,000 (shares of ₹ 100 per share) and ₹ 10,00,000 of 10% 12. debentures. Sales increased by 20% from 100,000 units to 120,000 units, the selling price is ₹ 10 per unit; variable cost amounts to ₹ 6 per unit and fixed expenses amounts to ₹ 200,000. The income tax rate is assumed to be 50%.

You are required to calculate the following:

- a) The percentage increase in EPS
- b) The degree of financial leverage at 100,000 units and 120,000 units
- c) The degree of operating leverage at 100,000 units and 120,000 units

ABC Ltd. has the following book value of capital structure 13.

. has the following book value of capital stru	(₹ in million)
Equity shares of (10 million shares ₹10 each)	100
11% Preference share capital (1,00,000shares of ₹ 100 each)	10
Retained earnings	120
13.5% Debentures (5,00,000 debentures of ₹ 100 each)	50
12% term loan	80
Total	360

The next expected dividend per share is ₹ 1.50. The dividend per share is expected to grow at the rate of 7%. The market price per share is ₹ 20. Preference stock redeemable after 10 years is currently selling for ₹ 75 per share. Debenture are redeemable after 6 years are selling for ₹ 80 per debentures. The tax rate for the company is 50%.

Calculate weighted average cost of capital using

- a. Book Value proportions
- b. Market Value Proportions

#### SECTION - C

(Compulsory)

(1X10=10)

14. The two companies, U and L, belong to an equivalent risk class. These two firms are identical in every respect except that U company is unlevered while company L has 10% debentures of ₹ 30 lakh. The other relevant information regarding their valuation and capitalization rates are as follows:

Particulars	Firm U	Firm L
Net operating income	7,50,000	7,50,000
Interest on debt		3,00,000
	7,50,000	4,50,000
Equity capitalization rate	0.15	0.20
Market value of equity	50,00,000	22,50,000
Market value of debt		30,00,000
Market value of firm	50,00,000	52,50,000
Implied overall capitalization rate	0.15	0.143
Debt equity ratio	0	1.33

- a) An investor owns 10% equity shares of company L. Show the arbitrage process and the amount by which he could reduce his outlay through the use of leverage.
- b) According to MM, when will this arbitrage process come to an end?

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## St. Aloysius College (Autonomous) Mangaluru Semester I – P.G. Examination - M.Com January - 2023

## **INCOME TAX**

Time: 3 hrs

Max Marks: 70

#### SECTION - A

## Answer any FIVE questions out of seven questions.

 $(5 \times 4 = 20)$ 

Following are the incomes of Mohan: 1.

a) Received ₹ 10,000 in India, which accrued in England;

b) ₹ 20,000 earned in India but received in England;

- c) ₹ 10,000 were earned and received in Africa but brought to India;
- d) ₹ 28,000 were earned and received in Japan from a business, which was controlled and managed in Japan and this amount was not brought to India;

e) ₹ 16,000 was an untaxed foreign income of some earlier year, which

was brought to India in the previous year.

Compute the gross total income, if Mohan is: i) Ordinary resident ii) Notordinary resident iii) Non-resident.

Mr. Nag retired on 08.02.2022 from a private company, after completion of 30 years and 9 months of service. According to service rules, he was entitled to 25 days' leave for each completed year of service. Leave actually availed by him during the service life is 8 months. His basic pay was ₹ 16,000 from 01.04.2021 and D.A 50% of basic pay. He received ₹ 3,55,000 from leave encashment.

Find out the amount of leave salary chargeable to tax for the Assessment Year 2022-23.

- Define 'Annual value'. State the deductions that are allowed from the annual 3. value in computing the income from house property.
- Shri. Nagbhushan has the following investment during the previous year 4. 2021-22:
  - i) ₹4,00,000 10% Tax-free debentures of a company listed on a recognized stock exchange in India.
  - ii) ₹ 1,60,000 9% Tax-free commercial securities.
  - iii) ₹ 20,000 9% Port trust bonds.
  - iv) ₹ 30,000 10% Municipal debentures.
  - v) ₹ 1,60,000 12% Debentures of a public limited company (Not listed). For the purpose of purchasing securities mentioned above, he took a loan of ₹ 1,00,000 and paid an interest of ₹ 10,000 on it. The bank also charged 2% commission on realization of interest received on the above securities. Compute the income from interest on securities.
- What are the provisions regarding the set-off of the following losses? 5.
  - i) Long-term capital losses
  - ii) Short-term capital losses
  - iii) Speculation losses
  - iv) Losses of lottery and card games.
- From the following particulars in respect of Mr. Avinash, compute the 6. qualifying amount u/s 80C:
  - a) LIC Premium on his own life ₹ 22,000 [Policy was taken in 2017].
  - b) Sum assured in the above policy is ₹ 2,00,000.
  - c) Contribution to PPF ₹ 10,000.
  - d) Contribution to URPF ₹ 8,000.

- e) Subscription to NSC (VIII Issue) ₹ 9,000.
- f) Accrued interest on NSC ₹ 7,500.
- g) Repayment of bank loan for the construction of his own house ₹ 21,000.
- h) Investment in infrastructure bonds ₹ 40,000.
- i) Amount deposited in Post office Savings Bank account ₹ 5,800.
- From the following figures, you are required to compute the depreciation admissible and other liabilities, if any, in respect of the previous year 7. relevant to the Assessment Year 2022-23:

Particulars	Plant & Machinery	Building
Written down value at the beginning	2,50,000	10,00,000
Additions during the year	3,00,000	Nil
Sales during the year	6,00,000	2,00,000

#### SECTION - B

## Answer any FOUR questions out of six questions.

 $(4 \times 10 = 40)$ 

An assessee owns three house properties of which he uses one (No. III) for 8. his residence. The following are the particulars in respect of the properties for the year ended 31 March 2022.

Particulars	I	II ₹	III ₹
Standard Rent	13,000	3,600	
Municipal Value	12,000	4,000	10,000
Rent Received	12,000	4,800	
Municipal Tax paid	2,000	500	500
	Let-out for	Let-out for	Self-
House used	residence	residence	occupied
Repairs	600	200	
Interest on mortgage (loan not taken for house property)		500	
Ground rent	50	30	
Vacancy period	4 months		
Collection charges	850	50	

The assessee's income from other sources is ₹ 3,20,000. Compute the income from house property.

- A is a resident of Patna. He did not own any house and lived in a rented 9. house. He had purchased jewellery for ₹ 1,00,000 in April 2021. He sold this jewellery in July 2021 for ₹ 15,00,000 and invested the sale proceeds in August 2021 in the purchase of two residential houses - one at Patna for ₹ 7,00,000 and the other at Kanpur for ₹ 8,00,000. Is he liable to pay tax on capital gains for the Assessment year 2022-23? If so, determine the amount of capital gains liable to tax. Would it make any difference if A:
  - i) Invested the entire amount of ₹ 15,00,000 in the purchase of only one residential house at Patna?
  - ii) Invested ₹ 6,00,000 in the purchase of one residential house at Kanpur and deposited the balance of ₹ 9,00,000 in a bank?

The CII in 2001-02 was 100 and in 2021-22 it was 317.

4,59,600

10

From

10.

e following particulars co	₹	Particulars	4,50,000
Particulars	90,000	By Gross Profit	4,000
To Salaries	20,000	By Dividend	4,000
To rent	4,000	By Bad debts	4 400
To Service charges	5,000	recovered (allowed	4,400
To Legal expenses	6,000	earlier)	
To reserve for Income	0,000	By Interest on Post	
tax	42.000	office Savings Bank	1,200
To Depreciation	12,000	Office Salving	1.14
To Expense on acquisition of Patent	56,000		
rights	42.000		
To Office expenses	42,000		
To Contribution to RPF	12,000		
To Bad debts	4,500		

### Other information:

cheque

To Donation by

To Net Profit

i) Legal expenses include ₹ 2,000 incurred by the assesse for defending a criminal case against him.

2,500

2,05,600

4,59,600

- ii) Depreciation of the year on the assets other than patent rights is
- iii) Contribution to RPF includes ₹ 2,000 yet not paid until the due date of filing the return of income.
- Name the different kinds of Provident fund of which salaried employee may be a member, and state the income tax provisions regarding each. 11.
- Mr. Basavaraju furnishes the following particulars of his investments for the 12. previous year ended 31.03.2022:
  - a) ₹ 20,000 8% municipal debentures.
  - b) ₹ 30,000 10% Karnataka State Government Loan.
  - c) ₹ 40,000 18% tax-free debentures of X Co. Ltd. listed in a recognized stock exchange.
  - d) ₹ 20,000 7% Capital Investment Bonds of Government of India.

He also received during the same previous year:

- i) ₹ 2,000 as interest on Central Government Securities.
- ii) ₹ 2,000 as interest on State Government Securities.
- iii) ₹ 9,000 as interest on debentures of X Co. (Pvt.) Ltd. (not listed in a recognized stock exchange)
- iv) ₹ 1,500 as interest on bank deposit.
- v) ₹1,000 interest on loan given to a relative.

He paid ₹ 100 as commission to his bankers for collecting interest on securities.

Compute his Income from other sources.

Ramakrishna is a Chartered Accountant. He has submitted the following Income and Expenditure Account for the year 2021-22. Compute his Income 13.

from the profession for the Assessment Year 2022-23.

from the profession for the	₹	Particulars	₹
Particulars  To office rent To Salary to staff To Charities To Gifts to relatives To Subscription for Journals To Drawings To Car expenses To Household expenses To NSCs purchased	33,000 75,000 5,000 6,000 2,400 16,000 24,000 8,600 20,000 2,30,000	Particulars  By Audit fees  By Financial consultancy service  By Interest on Deposits in a Bank  By Dividends on units of UTI (Gross)  By Accountancy works	3,00,000 60,000 22,000 6,000 32,000
To Net Income	4,20,000	TRANSPORT OF STREET	4,20,000

Additional information:

- i) Office rent ₹ 3,000 though paid is not recorded.
- ii) Depreciation of car during the year is ₹ 6,000.
- iii) 30% of car expenses are related to personal purpose.

#### SECTION - C

(Compulsory)

(1X10=10)

- Compute the taxable salary of Smt. Gopi Devi of Kanpur for the Assessment 14. Year 2022-23 from the following information:
  - i) Basic salary ₹ 16,000 p.m.
  - ii) Dearness allowance ₹4,000 p.m. (as per the terms of employment)
  - iii) Bonus ₹ 16,000 p.m.
  - iv) Rent-free accommodation provided by the employer at Kanpur (population exceeding 25 lakh), the fair rental value of which is ₹ 60,000 p.a. The cost of furniture provided therein is ₹ 20,000.
  - v) Entertainment Allowance ₹ 1,000 p.m.
  - vi) Her contribution to Recognized Provident Fund is at 15%.
  - vii) Employer's contribution to Recognized Provident Fund is ₹ 30,000 p.a.
  - viii) Interest on Recognized Provident Fund balance at 9.5% p.a. is ₹19,000.
  - ix) Free use of a large motorcar for both official and personal purposes. Driver is also provided by the employer.

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## St. Aloysius College (Autonomous) Mangaluru Semester I – P.G. Examination - M.Com January - & v & 3

## **ECONOMIC ENVIRONMENT AND POLICY**

Time: 3 hrs

Max Marks: 70

#### SECTION - A

Answer any FIVE questions out of seven questions.

(5×4=20)

- What do you understand by economic environment? Distinguish between economic environment and noneconomic environment.
- Elaborate various prudential norms on capital adequacy.
- What is special economic zone? State its objectives.
- Write a note on FDI in retail sector.
- 5. Explain the rights of consumers under Consumer Protection Act 2019.
- 6. Explain the pros and cons of Globalization of Indian Economy.
- 7. Explain the limitations of socialistic economic system.

#### SECTION - B

## Answer any FOUR questions out of Six questions.

 $(4 \times 10 = 40)$ 

- 8. Discuss the various forms of formal Indian Financial system
- 9. Critically evaluate new Industrial Policy 1991
- Explain the various provisions of Competition Act 2002
- Explain the various provisions, advantages and limitations of second generation reforms
- Describe the role of Consumer Disputes Redressal Agencies.
- Explain the various provisions of FEMA

#### SECTION - C

(Compulsory)

(1X10=10)

14. Mahindra and Mahindra is a major player in the tractor and certain segments of the automobile market in India. After an impressive growth for a few years, the tractor market in India has been stagnant during 1998 to 1999 to 2000 to 2001. M&M has been selling its tractor and utility vehicles in foreign market including USA. Some of the component for its products have been sourced from abroad.

M&M has a 100% subsidy in USA, Mahindra USA, with a strong network of 100 dealer. Mahindra has a 5% market share in the US market in the 28-30 horse power range.

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As a part of the strategy aimed at building a global supply chain, Mahindra USA has signed a memorandum of understanding with Korean Tractor major Tong yang, a part of the dollar 2 billion Tong yang Moolsam group, according to which Mahindra will source high horse power (mostly 25 to 40 horse power range) and sell them around world under M&M brand name. To start with the premium range of tractor will be sold in USA. M&M current tractor range is more utility oriented and lacks the aesthetic appeal the Tong Yang's tractors have, a must for a strong presence in the US market.

- What are the advantages and disadvantages of global sourcing?
- 2. How will the foreign market expansion help M&M?
- 3. How does strategic alliance with Tong Yang benefit M&M?

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## St. Aloysius College (Autonomous) Mangaluru Semester I – P.G. Examination - M.Com January- & ロス3

## CORPORATE LAW, ETHICS AND GOVERNANCE

Time: 3 hrs

Max Marks: 70

### SECTION - A

## Answer any FIVE questions out of seven questions.

 $(5 \times 4 = 20)$ 

- What is the procedure for transfer of a registered office of a company from one state to another state?
- Discuss the various sources of ethical standards
- 3. Explain the doctrine of constructive notice
- List of the benefits of good corporate governance
- 5. "A promoter stands in a fiduciary relation towards the company he promotes". Explain.
- The company under 'Companies Act 2013 is an artificial person in the eyes of law but not a citizen of the country'. Comment
- 7. What are articles of association? What restrictions have been imposed on their alteration?

#### SECTION - B

## Answer any **FOUR** questions out of six questions.

 $(10 \times 4 = 40)$ 

- "Memorandum and Articles are public documents" Explain this statement and discuss the doctrine of indoor management.
- Explain the doctrine of ultra vires with reference to Ashbrey Railway Carriage & Iron Co. Ltd. V. Riche (1875) case. What are the effects of Ultra-vires agreements?
- Enumerate the legal compliances and stages in the formation of Joint Stock Company.
- 11. What is Whistle-blower Protection Act of 2014? Analyse a real-life case of whistle blower in India.
- Explain the areas in HRM which are more prone to unethical practices.
- Explain the Corporate Social Responsibility Models suitable for Indian Business.

#### SECTION - C

#### (Compulsory)

(1X10=10)

Analyse the case and answer the following questions:

With the passage of time the Tasty Meal starts realizing the importance of CSR(Corporate Social Responsibility). Tasty meal now understands that being socially responsible is the key to success in the business world. It has taken a few responsible steps in the interest of its stakeholders.

These are;

- Raising hourly wages of employees
- Addition of healthy food such as green salad with each menu free of cost and removing unhealthy and high calorie meals from menu
- Start donating money from its net profit to NGOs to take care of the community
- Using recyclable products instead of disposables such as tableware and containers
- Promoting environmental protection by launching campaigns like Save Earth, Green Day, Save the Beaches etc.

Questions:

- a) In your opinion what are the reasons behind Tasty Meal's steps?
- b) Do you think that Tasty Meal will increase its profitability by taking such steps?
- c) Ethical practices in business have always conflicts with huge profit. Do you agree with this statement? Justify your answer.

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## St. Aloysius College (Autonomous) Mangaluru Semester I – P.G. Examination – M.Com. January – 2023

## QUANTITATIVE TECHNIQUES FOR DECISION MAKING

Time: 3 hrs Max Marks: 70

#### **SECTION A**

## Answer any FIVE questions out of seven questions.

 $(5 \times 4 = 20)$ 

- 1. Outline the various phases involved in solving an operations research problem.
- Consider yourself as a project manager of an IT company. Your client is requesting for the probability of completing a project within 31 days. The project length is 44 days and project length variance is 6. Calculate the probability using PERT.
- Identify the basic steps applied in a general simulation process.
- 4. An electric appliance company produces two products: refrigerators and ranges. Production takes place in two separate departments I and II. Refrigerators are produced in department I and ranges in department II. The company's two products are sold on weekly basis. The weekly production cannot exceed 25 refrigerators and 35 ranges. The company regularly employs a total of 60 workers in the two departments. A refrigerator requires 2 man-weeks labour while a range requires 1 man-week labour. A refrigerator contributes a profit of ₹ 60 and a range contributes a profit of ₹ 40. How many units of refrigerators and ranges should the company produce to realize the maximum profit? Formulate the above as a LPP.
- 5. Define the terms 'maximin element, minimax element and saddle point" of the payoff matrix of a two-person zero-sum games.
- 6. Differentiate between a transportation problem and an assignment problem.
- A company management and the labour union are negotiating a new three-year settlement. Each of these has 4 strategies:

I : Hard and aggressive bargaining

II : Reasoning and logical approach

III: Legalistic strategy

VI : Conciliatory approach

Union		Company	y Strategies	
Strategies	I	II	III	IV
I	20	15	12	35
TT	25	14	8	10
TTT	40	2	10	5
TV	-5	4	11	0

What strategy will the two sides adopt? Also determine the value of the game

#### **SECTION B**

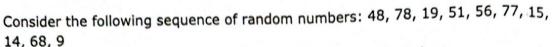
## Answer any **FOUR** questions out of six questions.

 $(4 \times 10 = 40)$ 

8. A bakery keeps stock of popular brand of bread. Previous experience indicates the daily demand as given below:

Daily Demand	0	10	20	30	40	50
Probability	0.01	0.20	0.15	0.50	0.12	0.02

Contd...2



Using above sequence, simulate the demand for the next 10 days.

- (i) Find out the stock situation if the owner of the bakery decides to make 30 breads every day.
- (ii) Estimate the daily average demand for the bread on the basis of simulated
- 9. A computer centre has got four expert programmers. The centre needs four application programmes to be developed. The head of the computer centre, after studying carefully the programmes to be developed, estimates the computer time (in minutes) required by the respective experts to develop the application programmes as follows:

Programmers	Programmes			
	Α	В	С	D
1	120	100	80	90
2	80	90	110	70
3	110	140	120	100
4	90	90	80	90

Assign the programmers to the programmes in such a way that the total computer time is minimum.

- 10. Explain various types of operations research models and indicate their application to production, inventory and distribution systems.
- 11. A project has the following time schedule

Activity	Time in months	Activity	Time in months
1-2	2	4-6	3
1-3	2	5-8	1
1-4	1	6-9	5
2-5	4	7-8	4
3-6	8	8-9	3
3-7	5		

Construct PERT network and compute:

- (i) Total Float, Free Float and Independent Float
- (ii) Critical path and its duration
- 12. Use simplex method to solve the LPP

Max Z = 
$$3X_1 + 2X_2$$
  
Subject to,  $X_1 + X_2 \le 4$   
 $X_1 - X_2 \le 2$   
 $X_1, X_2 \ge 0$ 

13. Reduce by dominance to  $2 \times 2$  game and determine the value of the game.

$$\begin{bmatrix} 5 & 4 & 1 & 0 \\ 4 & 3 & 2 & -1 \\ 0 & -1 & 4 & 3 \\ 1 & -2 & 1 & 2 \end{bmatrix}$$

### SECTION - C (Compulsory)

 $(1 \times 10 = 10)$ 

14. A company has three warehouses W1, W2 and W3. It is required to deliver a product from these warehouses to three customers A, B and C. The warehouses have the following units in stock:

V	rehouse
-	
-	of units

The customer requirements are:

Customer	Α	В	C
No. of units	70	30	50

The table below shows the cost of transporting one unit from warehouse to the customer:

Customer	Warehouse		
	W1	W2	W3
A	5	7	8
В	4	4	6
<u> </u>	6	7	7

Find the optimal transportation route.