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AD admitted
Regular
Students

TRIBHUVAN UNIVERSITY
FACULTY OF MANAGEMENT

Office of the Dean

Model Question 2024

Full Marks: 100

Pass Marks: 50

Time: 3 Hrs.

BBA / BBM / Fourth Semester / FIN 207: Financial Management

Candidates are required to answer the questions in their own words as far as practicable.

Group “A”

Brief Answer Questions:

[10 × 2 = 20]

1. Write about agency problem in a corporation.
2. What do you mean by business ethics?
3. Write the meaning of financial plan.
4. Differentiate between business risk and financial risk.
5. What are the motives of holding cash?
6. How does investment opportunity of a firm affect its dividend policy?
7. Assume that the risk-free rate is 4 percent and the market risk premium is 8 percent. What is the expected return for the overall stock market? What is the required rate of return on a stock with a beta of 1.5?
8. A firm has DOL of 2 times and DFL of 2.5 times. What is its degree of total leverage? If sales increases by 10 percent, what will be the percentage increase in net income?
9. Mega Company sells on credit terms of net 40. Its accounts are, on average, 45 days past due. If annual credit sales are Rs 9 million, what is the company's amount of accounts receivable? Assume 360 days a year.
10. You can buy a Mobile Phone at Yen 80,000 in Japan. The same mobile phone costs Rs 60,000 in Nepal. What is the exchange rate between Nepalese Rupee and Japanese Yen as per purchasing power parity?

Group “B”

Short Answer Questions: (Attempt any SIX Questions)

[6 × 5 = 30]

11. Describe the responsibility of financial manager of a firm.
12. Explain the factors affecting the capital structure of a corporation.
13. What do you mean by cash management? Describe the importance of holding sufficient cash.

14. Sanghrila Company is considering changing its credit terms from net 30 to net 50, in order to increase sales . At present average collection period is 45 days and it will be 60 days under proposed plan. The change will also affect in the present 1.5 percent level of bad debt to 2 percent on all sales. Due to change in credit terms it is expected to increase in sales from Rs 3 million to Rs 3.6 million per year. The variable cost ratio is 70 percent, the cost of funds invested in accounts receivable is 12 percent, and the marginal tax rate is 40 percent. Should the Sanghrila change its credit terms?
15. ABC Manufacturer ladies sandals. Each unit of output is sold for Rs 45 the fixed cost is Rs 175,000 of which Rs 110,000 are annual depreciation charges, variable costs are Rs. 20 per unit.
 - a. What is the profit breakeven point?
 - b. What is the cash breakeven point?
 - c. Assume ABC is operating at a level of 4000 units. Are creditors likely to seek the liquidation of ABC, if it is slow in paying its bills?
16. Suppose the exchange rate between US dollar and EMU euros is Euro 1.1215 = \$1.00 and the exchange rate between the US dollar and the Canadian dollar is \$1.00 = C\$1.5291.What is the cross rate of Euros to Canadian dollars? Also interpret the result.
17. XYZ Toys, a large manufacturer of tops and dolls, uses large quantities of flesh colored cloth in its doll production process throughout the year the company uses 1250,000 square yards of this cloth. The fixed cost of placing and receiving an order are Rs. 2000 which includes a Rs. 1500 setup charge at the mail, the price of the cloth is Rs 2050 per square yard. The annual cost of carrying this inventory item is 20 percent of the price. XYZ maintains a 12,500 square yards safety stocks the cloth supplier requires a 2 week lead time from order to delivery.
 - a. What is the EOQ for this cloth?
 - b. What is the total cost of the inventory?
 - c. Calculate re-order point.

Group “C”

Long Answer Questions: (Attempt any THREE Questions)

[3 × 10 = 30]

18. What is multinational financial management? How does the multinational financial management differ from domestic financial management? Discuss.
19. Consider the probability distribution of alternative rates of return associated with Stock M and Stock N given in the following table.

State of economy	Probability	Stock M	Stock N
Recession	0.3	5%	40%
Average	0.4	15	20
Boom	0.3	25	0

- a. Calculate the expected return and standard deviation of Stock M and Stock N. If you have to invest in a single stock, which stock would you prefer? Why?
- b. What are the covariance and correlation coefficient between Stock M and Stock N?

- c. If you form a portfolio of Stock M and Stock N comprising 60 percent wealth in Stock M and the rest in Stock N, calculate the risk and return your portfolio. Are you able to diversify the risk? [4+3+3]

20. The Balance Sheet of Star Trading Company as of December 31, 2023 is shown below.

Balance Sheet as of December 31, 2023

Cash	Rs 20,000	Accounts payable	Rs 35,000
Accounts receivable	30,000	Accruals	20,000
Inventories	50,000	Notes payable	25,000
Total current assets	Rs 100,000	Total current liabilities	Rs 80,000
Net fixed assets	100,000	Common stock	100,000
		Retained earnings	20,000
Total assets	Rs 200,000	Total liabilities and equity	Rs 200,000

Sales in 2023 were Rs 400,000 which are expected to increase by 50 percent or to Rs 600,000 in 2024. All assets are utilized to full capacity. The profit margin of the firm is 10 percent and the firm is expected to maintain a retention ratio of 30 percent.

- a. What is the additional fund needed (AFN) of the firm? Use AFN equation to estimate additional fund needed.
- b. Prepare projected balance sheet of the company for the year 2024. [4+6]
21. The Himalaya Company has the following shareholders' equity account:

Common stock (100,000 shares @ Rs 100)	Rs 10,000,000
Share Premium	5,000,000
Retained earnings	35,000,000
Shareholders' equity	Rs 50,000,000

The current market price of the stock is Rs 600 per share.

- a. What will happen to this account and to number of shares outstanding after 20 percent stock dividend? In the absence of an informational or signaling effect, at what price should the common sell after the 20 percent stock dividend? What might happen if there were a signaling effect?
- b. Show the effect of 2 for 1 stock split in equity account and market price of the shares. [6+4]

Group "D"

Comprehensive Answer / Case / Situation Analysis Questions:

[20]

22. The responsibility of corporate financial manager has tremendously increased. The financial manager's task is to make decisions concerning the acquisition and use of

funds for the greatest benefit of the firm. Some specific responsibilities are financial managers make major investment and financing decisions. In this backdrop, you are a financial analyst for Everest Electronics Company. The Director of capital budgeting has asked you to analyze two proposed capital investments, Project S and L. Each project has cost of Rs 1,000,000, and the cost of capital for each project is 10 percent. The projects expected net cash flows are as follows:

Year	Expected Net Cash Flow	
	Project-S	Project-L
0	(Rs. 1,000,000)	(Rs. 1,000,000)
1	400,000	500,000
2	400,000	400,000
3	400,000	300,000
4	400,000	600,000

You are asked to answer following questions:

- Define payback period. Also calculate payback period of each project.
- What is net present value? Calculate net present value of each project.
- Define internal rate of return. Calculate internal rate of return of each project.
- Which project or projects should be accepted if they are independent?
- Which project should be accepted if they are mutually exclusive?

[4+5+5+3+3]

Tribhuvan University
Faculty of Management
Model Questions 2024

Full Marks: 100
Pass Marks: 50
Credit: 3

BBA / BBM 4th Semester / MGT 234: Legal Environment for Business in Nepal

Candidates are required to give their answers in their own words as far as practicable. Figures in the margin indicate full marks.

Brief Answer Questions:

[10 x 2 = 20]

1. What do you understand by legal environment of business?
2. Give two basic differences between Substantive Law and Procedural Law.
3. Give justification why a minor is declared as an incapable person to enter into a valid contract?
4. Define who is the offeror with example?
5. What do you mean by the writ of *injunction*?
6. Distinguish between void and voidable contract.
7. Whether a contingent contract is valid contract?
8. List out four major sources of law.
9. A common carrier has to carry goods indiscriminately. Write two cases when it can refuse to carry goods.
10. Dipak agrees to let his flat to John for use as a gambling den at a monthly rent of Rs. 75,000. After 6 months, John stops the payment of rent. Advise Dipak whether he is entitled to recover the rent from John.

Group “B”

Short Answer Questions (Attempt Any Six):

[6 x 5 = 30]

11. What do you mean by business law? Explain in brief the sources of Nepalese Business Law.
12. What do you understand by the term ‘quasi contract’? Explain the four major provisions prescribed by the Nepalese law of contract in this respect.
13. Explain in brief the rules regarding valid Offer.
14. Distinguish between sale and agreement to sale with examples.
15. Describe in brief the rules regarding valid Acceptance with examples.
16. Explain in brief various modes of creating Agency.
17. Distinguish between 'Charter party' and 'Bill of Lading' with examples.

Group “C”

Analytical / Long Answer Questions (Attempt Any Three):

[3 x 10 = 30]

18. What is the performance of the contract? Discuss various rules regarding performance of contract.
19. Dispute may arise in business. Give concept of arbitration and discuss its importance as an alternative dispute resolution system in the business sector.
20. When do the parties to a contract become free from their liabilities? Discuss various circumstances of termination of contract.
21. What is breach of contract and what are its types? Discuss the legal remedies available for the aggrieved party.

Group “D”

Comprehensive question /Case analysis /Situation analysis question: [4 x 5 = 20]

22. a) X and Y are standing on the opposite banks of a river. X shouted, offering to sell his car to Y for Rs. 10, 00,000. Y hears the offer and shouts back that he accepts the offer made by X. Unfortunately, at that precise moment, low flying aircraft passes by, and Y's acceptance is not heard by X's answer because of noise. Whether there is created a binding contract between X and Y? Justify your answer with logic. (5)
- b) Dr. Sharma and Dr. Shrestha entered a partnership contract to run a medical clinic in Kathmandu. The contract between them provides that 'any of them should not practice as a doctor in Kathmandu within the territory of one kilometer for the period of two years, and if did so, he should pay Rs 1,00,000 to another as compensation'.
But, immediately after six months, Dr. Sharma began to practice as a doctor by next door to the clinic. Dr. Shrestha, thereupon, sued Dr. Manoj for compensation for the breach of contract between them. If you were a lawyer of Dr. Shrestha, advise in the following issues:
(i) What is the legality of this agreement? [2.5]
(ii) Whether Dr. Sharma is bound to pay compensation to Dr. Shrestha for the breach of contract? [2.5]
- c) Janata Jewel Store delivers a golden necklace to Mrs. Yamuna on the basis of 'sale or return' condition for three days. Both parties agree that 'the ownership will pass after notice of acceptance' by Mrs. Yemuna, the buyer.
The second day Mrs. Yamuna sells the necklace to Gyanu who buys that Jewel on good faith. But Yamuna has neither given notice of acceptance of the goods nor price to the Janata Jewel store.
Answer following questions with reason:
(i) Whether contract between Janata jewel store and Mrs. Yamuna valid? [2.5]
(ii) Whether Gyanu acquires ownership of the Jewel? [2.5]
- d) X has delivered a tiger to the Railway for carriage. The cage of the tiger suddenly breaks by the jolts received during the journey and the tiger escapes and reaches the area of farmland. The tiger kills a bullock belonging to Y, a farmer and was immediately shot dead by the security officials of the Railway Administration.
Who is responsible for the deaths of these animals? Answer with reason? [5]

-- GOOD LUCK --

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Model Questions 2024

*Full Marks: 100
Pass Marks: 50
Credit Hours: 3
Time: 3 Hours*

BBA/Fourth Semester/ MGT 235: Human Resource Management and

Candidates are required to give their answers in their own words as far as practicable. Figures in the margin indicate full marks.

Group A

Brief Answer Questions

(10*2 = 20)

1. Enlist any two human resource development functions.
2. What are the components of HRIS?
3. Where do we get the information for Human Resource Demand forecasting?
4. Differentiate between unstructured and structured interviews.
5. Give the meaning of employee counseling with an example.
6. Who are the stakeholders in 360-degree performance appraisal?
7. What is meant by voluntary turnover of employees?
8. Give meaning to 'fair treatment at the workplace'.
9. Who are the main actors of 'employee relations'?
10. Point out any two roles of technology in managing human resource.

Group B

Short Answer Questions: Attempt any Six Questions 6*5 = 30

11. Briefly explain the contemporary issues in human resource management.
12. Assess the HR technology situation in Nepalese organizations.
13. Draft a template of a 'Job Description' of a job of your interest.
14. Describe in brief various selection tests to be used to select employees.
15. Briefly explain the objectives of career planning in the organization.
16. Describe in brief different types of rewards in Nepalese organizations.
17. Explain in brief the major provisions in the Labor Act 2074 B.S.

Group C

Long Answer Questions: Attempt any THREE Questions (3*10 = 30)

18. The HR Manager is not only the technical authority for the supervision of employees but also an overall actor in the organization especially in the competitive global business environment. Based on the statement, critically examine the changing roles of HR managers.
19. Critically evaluate the significance of Training Need Assessment. Also, explain different approaches for evaluating training effectiveness.
20. Performance appraisal of employees plays a crucial role in the compensation and motivation of employees but it is costly, time-consuming, and prone to human errors. In the given situation, justify how the use of technology facilitates the performance appraisal of employees.
21. Retaining employees in the organization is a more challenging job for HR managers. High employee turnover reduces employee morale, organizational performance, and goodwill.

Supporting the given statement, suggest effective retention strategies to top-level management with justification.

Group D

Comprehensive question /Case analysis /Situation analysis question (4*5 = 20)

22. *Read and analyze the following case carefully and answer the questions given below:*

ABC Pharmaceuticals is a leading pharmaceutical company in Nepal, known for its commitment to innovation and employee welfare. With a workforce spread across multiple locations, ABC faced challenges in effectively managing its human resources and fostering a culture of collaboration and engagement. A well-identified challenge of ABC is to modernize its HR practices to address the difficulty in managing employees to maintain accurate and up-to-date employee information from the currently practicing manual record-keeping systems. HR manager, Jolly reports that she is struggling to maintain employee engagement because of traditional communication systems and limited access to resources hindering employee engagement and collaboration. In addition, the organization has an inefficient recruitment process and inappropriate training and development programs. Jolly accepts the organization's failure to attract new talents in the organization.

To overcome these challenges, ABC Pharmaceuticals formed a committee of five people under the chairmanship of Jolly and given the Terms of Reference to identify major problems of employees and suggest strategies to implement. The committee is convinced of the above-mentioned challenges and most of the members agreed on the use of a comprehensive HR technology solution consisting of different components like an Integrated HR Management System, Employee Self-Service Portal, Collaboration Tools, Recruitment Software, and Automated Performance Appraisal System. However, one of the influential members of the committee, who is also a Finance Manager of the Pharmaceuticals denied investing huge capital in HR technologies.

Questions

- a. Give the synopsis of the case with major issues and problem.
- b. Do you believe that the use of HR technologies in ABC will solve employee-related problems? Justify.
- c. If Jolly needs to bargain with employees for the use of HR technologies, suggest alternative HR functions to be implemented along with the use of HR technologies.
- d. Do you think the use of suggested HR technologies affects in current job design? If yes, how do you redesign the job of sales persons. Explain

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Model Questions 2024

Full Marks: 100
Pass Marks: 50
Credit: 3

BBA 4th Semester / MKT 201: Fundamentals of Marketing

Candidates are required to give their answers in their own words as far as practicable. Figures in the margin indicate full marks.

Brief Answer Questions:

(10×2 =20)

1. Give the meaning of market with example.
2. What are the fundamentals principles of a new marketing concept?
3. Write down the steps of the organizational buying process.
4. What is internal marketing?
5. Enlist the steps of the marketing research process.
6. What is proactive marketing?
7. Give the meaning of the marketing environment.
8. Point out the marketing mix components for service products.
9. What are the reasons to use a mix channel?
10. Give any four examples of sales promotion tools used in the Nepalese market.

Short Answer Questions:

(6×5=30)

11. “Marketing is creating, communicating and delivering value for customer satisfaction.” Elaborate.
12. What is market segmentation? Explain the bases for consumer market segmentation.
13. Show your acquaintance with the term ‘shopping product’ and also explain the marketing considerations required to sell such products effectively in the Nepalese market.
14. Draw the channel structure for consumer goods and explain what types of consumer goods are marketed through direct channels.
15. Give the meaning of pricing and also discuss the factors affecting pricing with suitable examples.
16. What is advertising? What are its features? Explain.

Long Answer Questions:**(3×10=30)**

17. What is the product life cycle? Discuss the marketing strategies suitable for various stages of the product life cycle.
18. Give the meaning of market logistics and describe the components of market logistics.
19. What is promotion? What are its components? Discuss the factors that may have effect on the selection of promotion mix.

Comprehensive Answer Questions:**(2×10=20)**

Read the following case carefully and answers the questions given below:

Caterpillar is a leading manufacturer of construction and mining equipment. Its CEO, Donald Fites, publicly proclaims that the single biggest reason for caterpillar's considerable success is its marketing channel. Fite's reasoning is tied to the nature of the Product category ("the machine that makes the world work"). Earth moving equipment is highly expensive, so industry unit volume is low. Thus, there are few points of sale. The products are complex, but fairly standard. The same machine, with minor customization can be sold to mining operations, farms and construction projects throughout the world.

Caterpillar's strategy in this market is to charge a premium price, justified by differentiation on the basis of post sales service. To ensure superior service, Caterpillar sells most of its product worldwide through a close network of alliances with only 186 dealers, all of them independently owned, two-thirds of them outside the company's North American home market. Caterpillar sells through independent dealers because, according to Fites, local dealers are long-standing members of their communities. They understand customers and can relate to them better than a global company can. For their customers they serve as trusted sources of advice, financing, insurance, operator training, maintenance and repair. To do this, Caterpillar forges alliances with dealers, who in turn are the face of the company to its customers. This does not mean dealers are solely responsible for all channel flows. Caterpillar maintains an extensive inventory of parts, with guaranteed delivery anywhere within 48 hours. And Caterpillar makes investment in its dealers including:

- Territory exclusivity
- Strong working relations with dealer personnel
- Assistance in inventory management, logistics, equipment management and maintenance
- Joint marketing campaigns
- Technical training of dealer personnel

Dealers, in turn, make heavy Caterpillar-specific investments including:

- Exclusive dealing
- Multi-million dollar inventories of parts
- Heavy fixed investments in Caterpillar-specific equipment and information technology
- Joint marketing
- Training their customers in the use of Caterpillar equipment

Dealer and factory personnel work together to resolve product problems i.e. “sharing the pain and spreading the gain.” In this regard, Caterpillar refuses to do direct selling. Even when customers insist, the company refers the business to dealers.

Over time, a large stock of trust has accumulated. But there is also a reasonable level of conflicts about limit of service territories, product and pricing policies, the dealer’s desire to diversify into other product categories Caterpillar does not serve.

Ultimately, Caterpillar credits its dealers with the manufacturer’s leading position as a global leader.

- i. Critically evaluate the Caterpillar’s distribution strategies.
- ii. Is intensive distribution strategy appropriate for the company? Give your arguments.

TRIBHUVAN UNIVERSITY
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BBA-BBM ACC 203: Taxation & Auditing

Full Marks: 100

Pass Marks: 50

Candidates are required to give their answer in their own words as far as practicable. The figures in the margin indicate full marks.

Group A

Brief answer questions

Attempt ALL Questions

(10 x2=20)

1. Define direct tax with example.
2. Define permanent account number (PAN).
3. Explain the term Input VAT.
4. What are the sources of income as per the Income Tax Act, 2058?
5. Mention any two objectives of an auditing.
6. Messi who is a citizenship of Argentina, came to Nepal on 1st Baishakh, 2080 and stayed at the end of previous income year. He earned \$10,000 as consultancy fees from ANFA.

Required: Taxable income, tax liability and residential status of Mesi. [Dollar exchange rate \$ 1= Rs.130].

7. Shivam has been operating a proprietorship business located at Kathmandu Metropolitan City, his sales and taxable income was Rs. 2.50 million and Rs. 300,000 respectively. He had adopted to be presumptive tax payer.

Required: Determine the tax liability with explanation as he is a presumptive taxpayer.

8. Mr. Thapa is working in a private company at a regular salary of Rs. 50,000 per month. The company has provided him a quarter facility for his residence and a car facility for official as well as private purpose.

Required: Total amount to be included in employment income of Mr. Thapa.

9. Mrs. Sharma is a government officer and received net salary after deducting approved retirement fund Rs. 72,000 and tax deduction at sources Rs. 28,000, including one month equal Dashain allowance Rs. 680,000 in the previous income year.

Required: Monthly salary, taxable income and tax liability of Mrs. Sharma, she elected family status.

10. Following are the details of Non Chargeable Business Assets of Mr. Laxman for the previous income year.

Particulars	Total Incomings (Rs)	Total outgoing (Rs)
Land and Building	55,00,000	50,00,000
Shares Details: Listed Company	650,000	600,000
Unlisted Company	500,000	550,000
Unabsorbed loss of Non Chargeable Business Assets Rs. 200,000 from preceding year.		

Required: Capital gain or loss from Non Chargeable Business Assets.

Group B

Short answer questions

Attempt any SIX Questions

[6x5]

11. "Tax is the compulsory contribution from a person to government". Explain.
12. Describe the provision of installment method of tax collection as per the Income Tax Act, 2058 with example.
13. What do you mean by "Tax Deduction at Source"? With suitable example.
14. A trading firm was suffering from operating losses for the last three years. From year four it began making operation profit gradually at following:

Years	1	2	3	4	5	6
Profit (loss) Rs.	(50,000)	(100,000)	(150,000)	20,000	140,000	600,000

Additional information:

- a. On scrutiny, it revealed that donation of Rs. 20,000 charged in the profit and loss account in the 1st year.
- b. Profit of 6th year was derived before deducting depreciation Rs. 10,000.
- c. Business income Rs. 20,000 was not adjusted in the 3rd year.

Required: Taxable income and tax liabilities of sixth year and explanation wherever is necessary. **[4+1]**

15. Hari is retailer purchased goods from importer and amount paid to importer Rs. 13,673 including value added tax. Both the middlemen importer as well as retailer incurred packaging and administration cost Rs. 1,000 and 900 respectively. Profit charged by the importer 10 percent on cost plus profit but retailer charged 15 percent on their sales price.

Required: a. Import price of the importer b. Total VAT to government. **[2+3]**

16. Following are the details of the fixed assets of Trading House.

Particulars	Block B
Opening Written Down Value	Rs.800,000
New addition during the year	
Purchase of computer on 1 st Marg	Rs. 90,000
Purchase of furniture on 25 th Magh	Rs. 180,000
Purchase of office equipment on 10 th Baishakh	Rs. 270,000
Discarded during the year book value Rs 50,000	Rs. 100,000
Repairs and maintenance during the year	Rs.. 80,000

Required:

- a. Allowable depreciation and repairs and maintenance
- b. Value of fixed assets at the end of the fiscal year. **[2+3]**

17. The following is the summarized statement of cash concerning receipts and payments account of Mr. Sital [Lawyer] for the previous income year.

Receipts	Amount	Payments	Amount
To Balance b/d	150,000	By Personal expenses	30,000
To Consultation fee	500,000	By Office rent	50,000

To Casual income	50,000	By Stationery expenses	10,000
To House rent received	150,000	By Interest on loan [Profession]	10,000
To Legal fees received after TDS	850,000	By Telephone & internet expenses	15,000
To Loan from Bank	100,000	By Life insurance [own]	40,000
To Income from agriculture	20,000	By Accident insurance	10,000
To Lottery income after TDS	30,000	By Purchase of office computer [Marg]	60,000
To Dividend received	10,000	By Water & Electricity expenses	10,000
To Interest on Bank deposit	40,000	By Salary to office assistant	150,000
To Gifts and presents from clients	85,000	By Donation to public hospital	50,000
To Salary from part time lecturer at law campus	15,000	By Balance c/d	1,565,000
Total	2,000,000	Total	2,000,000

Additional information:

a. Depreciation of office computer as per Income Tax Act, 2058.

b. Office rent Rs. 20,000 is still outstanding.

Required: a. Net assessable income profession b. statement of taxable income [3+2]

Group C

Comprehensive answer questions

Attempt any **THREE** Questions

(3 X 10 =30)

18. Describe the provision regarding depreciation as laid down under the Income Tax Act, 2058 under Sec-19.

19. Briefly explain the administrative review and appeal to Revenue Tribunal.

20. Dhurmush furnished you following particulars of income and expenses for the previous income year.

a. Rent from subletting of house Rs. 200,000.

b. Dividend received from foreign country Rs. 100,000

c. Dividend received from domestic country Rs. 160,000

d. Mining rent from natural resources (TDS Rs.135,000) Rs. 765,000

e. Royalty received after TDS Rs. 170,000

f. Interest received from bank after TDS Rs.85,000

g. Interest received from local money transaction Rs. 50,000

h. Rent from plant and machinery after TDS Rs. 180,000

i. Having equal investment in shares, Mr. Dhurmush and his brother they received all together Rs. 200,000 as interest on investment.

j. Gain on sales of non-chargeable business assets Rs. 200,000.

He claimed the following expenses to deduct.

a. Collection charge of royalty related with natural resources Rs. 10,000

b. One month equal commission paid to agent for mining rent of natural resources.

c. Life insurance premium Rs. 40,000. .

d. Previous year business loss amount Rs. 50,000

Required:

a. Net assessable income from investment b. Statement of total taxable income c. Tax liabilities [5+3+2]

21. Mr. Arpan, a joint secretary in GON office disclosed the following details of his employment income for the previous year. He was promoted to this post on 1st Baishakh 2075, at a salary scale of Rs. 60,000 - 2,000 - 76,000.
- Life subsistence allowance Rs. 4,000 pm.
 - Salary in lieu of leave Rs. 50,000.
 - Local conveyance allowance Rs. 5,000 pm.
 - Clothing allowance Rs. 30,000.
 - Dearness allowance 20% of basic salary.
 - Remote area allowance Rs. 100,000 pa.
 - Saving from TADA Rs. 5,000. This allowance was paid as per the government provision.
 - Office provided him car facility along with chauffer. Fuel expenses Rs. 25,000, driver salary Rs. 20,000 p.m. and repairs & maintenance cost Rs. 30,000 paid by office.
 - A Gardner provided by the office, monthly salary Rs. 10,000 and his contribution Rs. 4,000 pm.
 - He is getting Rs. 2,000 p.m. meal and Tiffin facilities in the office canteen as the office provided to all the employees in an equal term.
 - Office awarded him and cash prize received Rs. 25,000 for regularity of his job.

Besides, the above employment incomes he disclosed the following facts on a query made by Income Tax Officer;

- Assessable income from profession Rs. 150,000
- Meeting allowance Rs. 18,500 Net after TDS Rs. 1,500
- Dividend from domestic country Rs. 20,000.
- Interest from bank deposit Rs. 50,000.
- Working at remote area group – “A”

He claimed the following expenses for deduction:

- He has donated Rs. 10,000 to Red Cross Society.
- Health insurance premium Rs. 3,000 per month.
- He spends for his personal medical treatment Rs. 20,000 and paid by office.
- Domestic expenses Rs. 500,000 and House insurance premium Rs. 2,000 pm.

Required:

- Assessable income from employment
- Statement of taxable income
- Tax liability. [5+3+2]

Group D

Case/Situation/Extended Problem Analysis Questions

Attempt all question:

[20]

22. Given below is the trading, profit and loss account of a proprietorship organization.

Particulars	Amount	Particulars	Amount
To Opening stock	25,000	By Sales	5,000,000

To Purchase	2,850,000	By Closing stock	350,000
To Carriage on purchase	25,000		
To Wages	175,000		
To Gross profit c/d	2,275,000		
	5,350,000		5,350,000
To Office rent paid	50,000	By Gross profit b/d	2,275,000
To Salary and provident fund	250,000	By Sundry incomes	50,000
To General expenses	65,000	By Dividend received	5,000
To Legal expenses	20,000	By Refund of customs duty	45,000
To Staff welfare expenses	125,000	By Bad debt recovered	40,000
To Interest on bank loan	130,000	By Agriculture income	10,000
To Fine and penalties	5,000	By Rent from staff quarter	25,000
To Life insurance premium (Own)	30,000	By Gain on non-chargeable business assets	50,000
To Insurance premium of fixed assets	15,000	By Gain on foreign exchange	20,000
To Research and development cost	50,000	By Refund of income tax	10,000
To Depreciation	50,000		
To Membership renewal charges	10,000		
To Provision for tax	10,000		
To Donation	20,000		
To Advance income tax paid	20,000		
To Drawing	30,000		
To Net profit	1,650,000		
	2,530,000		2,53,000

Additional information:

- Closing stock was undervalued by Rs. 50,000.
- Closing stock was valued Rs. 50,000 on last stock taking, however, it did not shown on the opening date.
- Salary includes Rs. 10,000 paid to employee without having Permanent Account Number [PAN].
- Legal expenses include Rs. 3,000 for income tax penalty.
- 80% of donation was given to tax exempt organization and rest amount paid to company.
- Sixty percent of bad debts recovered were not allowed previously.
- Depreciation is related to business assets of Pool 'D' having written down value of Rs. 400,000.
- Previous year cumulative business loss stood Rs. 50,000

Required:

- Net assessable income from Business.
- Net assessable income from investment.
- Statement of total taxable income
- Tax liability
- Giving explanation wherever necessary.

[10+2+3+2+3]

Model Question Business Research Methods
TRIBHUVAN UNIVERSITY
FACULTY OF MANAGEMENT
Office of the Dean

Full Marks: 100
Pass Marks: 50
Time: 3 Hrs.

BBM / Fourth Semester / RCH 311: Business Research Methods

Candidates are required to answer all the questions in their own words as far as practicable.

Group “A”

Brief Answer Questions:

[10 × 2 = 20]

1. Define applied research in your words.
2. Why does literature essential in research?
3. What is research problem?
4. What do you mean by Cohort study?
5. Write down any two objectives of research.
6. What do you mean by reliability?
7. Define mediating variable with example.
8. Define the term theoretical framework.
9. State type I error with an example.
10. Define mediating variable with example.

Group “B”

Descriptive Answer Questions (Attempt any SIX questions)

[6 × 5 = 30]

11. Differentiate the term qualitative and quantitative research.
12. What is research design? Explain any two types of research design.
13. Define sampling. Discuss any two types of probability sampling techniques.
14. What is research interview? Discuss about personal and telephone interview in brief.
15. What is data? What are the sources of data? Explain.
16. State the purposes of research proposal.
17. Define inferential statistics. Differentiate parametric and non-parametric tests.

Group “C”

Analytical Answer Questions (Attempt any THREE questions)

[3 × 10 = 30]

18. State and explain the features of scientific research.
19. What is theoretical framework? Explain the need of theoretical framework in research.
20. What do you mean by data analysis? What processes would you follow while processing the data? Explain.
21. Define the term research report. Write the contents of report format.

Group “D”

Comprehensive Answer Questions/Case Study:

[1 × 20= 20]

22. Read the following case carefully and answer the questions that follow:

A research paper aimed to examine the impact of corporate social responsibility activities on the customer satisfaction level of Nepal Telecom, the leading telephone and mobile service provider in Nepal. The study is focused to examine the impact of the four domination of corporate social responsibility (CSR) that is a self-regulating business model which helps a company be socially accountable to itself, its stakeholders, and the public. The four domination of CRS are legal, ethical, economic, and philanthropic on satisfaction of NTC customers during the period Jan-March 2017 through a questionnaire survey on the 200 subscribers of the three colleges of Kathmandu. The study found that ethical and philanthropic significant and positive impact on customer satisfaction, legal CSR made no contribution to customer satisfaction and economic CSR showed a negative impact on satisfaction of NTC customer.

Questions:

- a. Write the two research questions based on the given case.
- b. Which research design is used in this study? And why?
- c. Draw theoretical framework with dependent, independent and moderating variables.
- d. Develop research hypothesis.



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Office of the Dean
Model Question

Full Marks: 100
Pass Marks: 50

BIM Fourth Semester ACC 202: Cost and Management Accounting

Candidates are required to give their answer in their own words as far as practicable. The figures in the margin indicate full marks.

Group "A"

Brief Answer Questions (Attempt ALL Questions)

(10x2)

1. State any two objectives of cost account.
2. What is perpetual inventory system?
3. Define semi variable cost.
4. Write about opportunity cost.
5. What is premium plan?

6. A manufacturing company provides you the following information of a material:
 - Economic order quantity 4,000 units
 - Annual requirement 40,000 units
 - Cost per unit of material Rs.20
 - Carrying cost is 10% of inventory value

Required: Ordering cost per order.

7. The following data are given to you:

Standard and actual output =	2,000 units
Output per hour =	15 units
Rate per hour =	Rs.30

Required: Total wages under Gant Task Bonus Scheme

8. KK Company Ltd. is working at its annual normal capacity of 5,000 units. The total cost per unit is Rs.70. The annual fixed costs are Rs.100,000.

Required: Total cost at 80% of the normal capacity.

9. The following information of a manufacturing company are presented below:

Actual hours worked 2,900

Fixed overhead (4,000 hours Normal Capacity) Rs.32,000

Actual production 50 units

Standard hours per unit 60

Standard overhead rate per standard hour Rs.20

Actual overhead incurred Rs.65, 000

Required: Overhead Spending Variance

10. The following information is available in respect of a material.

- Maximum stock level = 8,000 units
- Minimum consumption = 400 units
- Average consumption = 500 units
- Delivery period = 6 days – 10 days
- Re-order level = 6,000

Required: Reorder quantity

Short Answer Questions (attempt any SIX questions)

(6x5=30)

11. Differentiate between fixed and flexible budget.

12. What are the limitations of cost volume profit analysis?

13. Differentiate between relevant and irrelevant cost.

14. ABC Manufacturing Company has sufficient idle capacity therefore; it would like to see the possibility of manufacturing a component used in its final products. The company has been buying the component from the outside suppliers at the rate of Rs.20. The other data have been presented below:

Annual need 25,000 units

Cost estimate for one unit:

Raw material	Rs.9
Direct labor	Rs.7
Manufacturing overheads	Rs.8
	Rs.24

The company has followed a system of defining its plant capacity in terms of direct labor hours. The normal capacity is 60,000 direct labor hours. The annual fixed manufacturing overhead is Rs.150,000. Two labour hours is needed to produce one unit.

Required: Differential cost analysis to decide whether the company should make or buy the components?

15. Following information are given to you:

Standard:

Material	Quantity	Standard Price per kg
----------	----------	-----------------------

A	40%	Rs.20
B	60%	Rs.30

Actual:

Material	Quantity	Actual Cost
A	70 kg	Rs.1,470
B	130 kg	Rs.4,160

Standard Loss is 10% and Actual output is 185 kg

Required: Material variances

16. The overheads of a Manufacturing Company are given below:

Fuel	Rs. 46,000
Rent	Rs. 50,000
Store overheads	Rs. 36,000
Amenities to staff	Rs. 24,000

Following further details are provided to you:

	Production department	
	A	B
Horse Power	10	8
Machine hours	3,000	2,000
Area occupied sq. feet	3,000	2,000
No. of staff	15	9
Direct material Rs.	30,000	18,000

Required: Overhead rate per machine hour for both products

(5)

17. The following are the information of a Manufacturing Company with Normal Capacity of 20,000 units:

Years	2078	2079
Production units	20,000	21,000
Sales units	19,000	20,000
Fixed factory overhead at Normal Capacity		Rs.100,000
Fixed administrative overhead		Rs.40,000
Fixed selling overhead		Rs.30,000
Unit selling price		Rs.30
Variable cost per unit Rs.:		
Raw material		8
Direct labour		6

Required: Income Statement under Absorption Costing for the year 2079 and reconcile profit without preparing Variable Costing Statement. (4+1)

Long Answer Questions (attempt any THREE questions) (3x10=30)

18. “The main objective of inventory management is to supply all kinds of inventory regularly in such a manner that there is no shortage of materials and the production has may not have to be stopped”, discuss.
19. “Management accounting provides relevant information for planning, controlling the organization activities and taking right decisions”, comment.

20. Following are the information of a renowned Hotel in Kathmandu

- Total number of single rooms = 30
- Total number of double rooms = 20

Annual expenses (Rs.) summary:

- Room attendant’s salary = 50,000 per month
- Administrative staff salary = 60,000 per month
- Other helpers salaries = 20,000 per month
- Lighting and heating = 160,000 per annum
- Repair and maintenance = 40,000 per annum
- Depreciation of buildings = 5% of Rs.5,000,000
- Depreciation of other fixed assets = 15% of Rs.1,000,000
- Insurance = Rs.15,000 per month
- Miscellaneous = Rs.200,000 per annum

Occupancy ratio:

- For 4 months = Single rooms 100%
Double rooms 80%
- For 8 months = Single rooms 70%
Double rooms 50%

Profit margin 20% on cost

Assume that the double room shall be regarded as 1.5 of the single room for fixing the rate of the room.

Required:

- a. Operating cost statement
- b. Room charge for single and double room per day (8+2)

21. The sales revenue and profit of a manufacturing company for two years were as follows:

Year	Sales Revenue (Rs)	Profit (Rs)
2078	500,000	(15,000)
2079	700,000	15,000

- Required:**
- i) Profit volume ratio
 - ii) Fixed cost
 - iii) Brake-even point in Rs.
 - iv) Break-even point in units if selling price per unit is Rs.100
 - iv) Sales to earn desired profit after tax of Rs.30,000 if tax rate is 25%
 - v) Profit when sales are Rs.1,000,000
 - vi) Margin of safety ratio if actual sales is Rs.900,000 (1+1+2+1+2+1+2)

Group "D"

Comprehensive Answer Question

(1 × 20 = 20)

22. A renowned organization is planning to prepare functional budget for their decision purpose from the following information:

Total sales for six months are 200,000 units, which are apportioned as:

Chaitra 15%, Baisakh 20%, Jestha 15%, Ashad 10%, Shrawan 10%, Bhadra 20% and Ashwin 10% respectively. Selling price per unit will be Rs.20

Purchase: One unit of finished goods requires 2 kg of material at a cost of Rs.10.

Wages: Each unit of finished good will need 2 labour hours and rate per labour hour will be

Rs.3 Overhead: Variable manufacturing cost will be Rs.3 per unit and fixed manufacturing cost for the year will be Rs.120,000

Inventory policy: Material: 50% of the subsequent month's requirement

Finished goods: 20% of the subsequent month's sale

Required for four months from Baisakh to Shrawan:

- a. Sales budget
- c. Production budget
- d. Material purchase budget
- e. Labour budget
- f. Manufacturing overhead budget
- g. Cost of goods sold budget
- h. Explain, why organizations need to prepare functional budget. (2+4+4+2+2+3+3)

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Office of the Dean
Model Question

Full Marks: 100
Pass Marks: 50

BIM Fourth Semester ECO 206: Economics for Business

Candidates are required to answer the questions in their own words as far as practicable.

Group “A”

Brief Answer Questions:

[10 × 2 = 20]

1. Microeconomics is also known as Price Theory. Why?
2. Write any four determinants of supply.
3. Define economic efficiency.
4. Prepare a list of properties of the equal product curve.
5. Define advertisement elasticity of demand.
6. Consider the isocost equation: $rK + wL = C$ and interpret the components.
7. What is an exchange rate?
8. Let the autonomous demand be 5 and the slope of the demand curve be 3. Derive linear demand curve.
9. Write any four causes for the shift in the supply curve.
10. .What does scarcity mean in economics?

Group “B”

Short Answer Questions: (Attempt any SIX Questions)

[6 × 5 = 30]

11. Describe the relationship between price elasticity of demand and revenue.
12. Calculate GDP at factor cost and market price from the following data.

Description	Rs in billion
Compensation of Employees	800
Rental income	60
Net interest	175
Proprietor's income	200
Corporate profit tax	150
Retained earning	115
Dividend	450
Capital consumption allowance	80
Indirect tax	250
Subsidy	30

13. The market demand function and supply function for a product are given below:
 Demand function, $Q_d = 500 - 5P$ and
 Supply function, $Q_s = 100 + 5P$ where Q is the quantity and P is the price.
- Compute demand and supply at prices: Rs 30, 35, 40, 45 and 50.
 - Compute price elasticity of demand and supply at equilibrium price.
14. Explain the concept of accounting profit and economic profit with suitable examples.
15. Explain the scope of macroeconomics.
16. Explain the quantitative instruments of monetary policy.
17. Given $Q = 100K^{1/2}L^{1/2}$, $C = \text{Rs } 1000$, $W = \text{Rs } 50$ and $r = \text{Rs } 40$. Determine the quantity of labor and capital that the firm should use to maximize output. What is the level of output?

Group “C”

Long Answer Questions: (Attempt any THREE Questions) [3 × 10 = 30]

- How is the equilibrium price determined? What will be the effect on the equilibrium price due to an increase in demand and supply simultaneously?
- Identify the factors that cause inflation, demand-pull or cost-push, in the Nepalese economy and explain them.
- The following data shows the quantity produced and their respective market prices of two goods A and B that a hypothetical economy produces:

Year	Output of A	Price of A (Rs)	Output of B	Price of B (Rs)
2019	450	2,000	1,500	25
2020	470	2,200	1,200	30
2021	470	2,300	1,400	30
2022	480	2,100	1,700	35

- Compute nominal GDP, real GDP, GDP Deflator, and rate of inflation.
 - Why is the real GDP a better measurement of welfare than nominal GDP? [8+2]
21. Consider the following cost schedule:

Output(Q)	0	1	2	3	4	5	6	7	8
Total variable cost (TVC)	0	40	72	96	128	200	320	496	720

- At $TFC = \text{Rs } 300$, compute TC, AFC, AVC, AC and MC
- Using a cost schedule, show the relationship between AFC, AVC, and AC.
- Graph TVC and TC and explain their relation.

Group “D”

Comprehensive Answer / Case / Situation Analysis Questions:

[20]

22. Read the following case carefully and answer the questions that follow:

Price discrimination refers to a pricing strategy in which a monopoly firm charges a different price from different segments of consumers. Consumers are discriminated against concerning price based on their income, age, sex, etc. Nepal Electricity Authority (NEA) is legally empowered by the government to enjoy a monopoly in the country like other firms such as Kathmandu Upatyaka Khanepani Limited (KUKL), Nepal Oil Corporation (NOC), etc. All of these natural monopolies practice the policy of price discrimination. Besides these firms, other public as well as private organizations also follow the policy of price discrimination as in Movie Theatre, Hospitals, Public Transport, Telecommunication, etc. Business firms also follow the policy of wage discrimination. NEA follows a price discrimination policy with its consumers, which varies widely. The categories are billed as household, industries, export, etc. Even within these categories, Household includes 6 different categories in terms of its consumptions under the 60 Ampere category:

Sometimes monopolies may charge high prices to increase their profit. In such cases consumers may be manipulated, having no alternatives, as a result, people will have adverse effects regarding the monopolies. Consumers, therefore, prefer a competitive business environment.

Questions:

- a. Give examples of price discrimination practiced in the public transportation and education sectors. Is it justifiable?
- b. Is it justifiable to follow price discrimination in telecommunication services? Give your critical comments.
- c. Why does the government endorse the policy of price discrimination?
- d. Why do business firms follow wage discrimination?



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Model Question

Full Marks: 60
Pass Marks: 30

BIM Fourth Semester IT 239: Web Technology II

Group "A"

Brief answer questions:

Attempt all questions.

(10 X 1=10)

1. What is server-side script?
2. What is PHP superglobal?
3. Define associative array.
4. What is static method?
5. Why do we need file handling?
6. List some benefits of storing website data in databases.
7. What is cookie?
8. What are the uses of session?
9. What is server-side framework?
10. What is dynamic website?

Group "B"

Short Answers Questions

Attempt any five questions.

(5 × 3= 15)

11. Compare \$_GET with \$_POST.
12. Explain regular expression with example.
13. How do you set and get cookies in PHP?
14. How do you access to user credentials from PHP?
15. Discuss some benefits of server-side frameworks.
16. How do you define a class in PHP? Explain with suitable example.

Group "C"

Long Answer Questions

Attempt any three questions.

(3× 5= 15)

17. How do you create functions in PHP? Explain with example.
18. How do you handle exceptions in PHP?
19. Write a program in PHP that reads a file and displays vowels only.
20. Explain the process of connecting a PHP program with the database and inserting data into it.

Group "D"

Comprehensive Questions

Attempt all questions.

(2 × 10 = 20)

21. Write a server-side script in PHP to illustrate inserting and retrieving data to and from the database table. Create required connection using your own assumptions. Use HTML form to insert and display data.
22. What are the benefits of using arrays? Write a program to display sum and average of 10 numbers stored in a PHP array. Why do we need associative arrays?

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Model Question

Full Marks: 60
Pass Marks: 30

BIM Fourth Semester IT 240: Business Data Communication and Networking

Group "A"

Brief answer questions:

Attempt all questions.

(10 X 1=10)

1. What do you mean by IoT?
2. What is HTTP?
3. List any two benefits of multiplexing.
4. What is asynchronous transmission?
5. What are the uses of IP address?
6. Why do we need network interface card?
7. What is virtual LAN?
8. List any two uses of VPN.
9. List any three Internet access technologies.
10. What is network management?

Group "B"

Short Answers Questions

Attempt any five questions.

(5 × 3= 15)

11. Explain different components of a network in brief.
12. Explain three cloud computing models in brief.
13. Explain twisted pair cable and coaxial cable.
14. Explain workings of WiMax in brief.
15. What are the functions of transport layer?
16. How does virtual LAN work?

Group "C"

Long Answer Questions

Attempt any three questions.

(3× 5= 15)

17. Explain different components of a LAN.
18. What is VPN? How does VPN work?
19. What are the building blocks of network design process?
20. How can we use cyclic redundancy check to check errors?

Group "D"

Comprehensive Questions

Attempt all questions.

(2 × 10 = 20)

21. What are different types of networks? Explain open systems interconnection (OSI) reference model in detail.
22. Why do we need routing? Explain different types of routing in detail. What is router?

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Model Question

Full Marks: 60
Pass Marks: 30

BIM Fourth Semester IT220: Database Management System

Group A

Brief answer questions:

Attempt all questions.

(10 × 1=10)

1. Write the advantages of using a database system over traditional file-based system.
2. What is data abstraction?
3. Define weak entity with example.
4. What is the use of GROUP BY clause?
5. What do you mean by functional dependency?
6. Why NoSQL databases have gained popularity in recent years?
7. What is the primary purpose of division operation in relational algebra within DBMS.
8. Define is serializable schedule?
9. What is concurrent transaction?
10. Differentiate between data warehouse and DBMS.

Group B

Short Answers Questions

Attempt any five questions.

(5 × 3= 15)

11. Explain three-schema architecture in brief.
12. Discuss the concept of specialization and generalization.
13. Write the purpose of unary relational operations: SELECT and PROJECT with example.
14. Differentiate between logical and physical data independence.
15. Describe the data definition language and data manipulation language features of SQL.
16. Define transaction and discuss their properties.

Group C

Long Answer Questions

Attempt any three questions.

(3× 5= 15)

17. What are the different types of relation used in ER diagram? Explain how ER diagram is converted to table.

18. What is join operation? Consider the following table and perform left and right outer join.

Employee

Emp_name	Province	City
Ram	Bagmati	Ktm
Shyam	Karnali	Surkhet
Hari	Madhesh	Janakpur
Sita	Ghandaki	Pokhara

Branch

Emp_name	Branch	Salary
Ram	Ntc	10000
Shyam	Ncell	20000
Hari	Ntv	30000
Gita	Radio Nepal	25000

19. Why database recovery is essential? How shadow paging is used for database recovery?

20. Why do we need concurrency control in databases? Explain.

Group D

Comprehensive Questions

Attempt all questions.

(2 × 10 = 20)

21. Consider a database system with following schemas;

Restaurant (R_ID, R_Name, R_address)

Cook(C_id, C_name, C_specilization, salary)

Works_At(C_id,R_ID, Workinghrs, Wshift)

Branch(B_ID, R_ID, Total_No_Sales, revenue)

Design an ER diagram for above schemas and write SQL statements for following queries;

- Select the name and address of restaurant where working shift is “day”.
- Select name of all cook having specialization “ Italian”.
- counts the number of cook whose working hours are “night”
- Find the average salary of the cooks.
- Find names of restaurant and their branches which generate revenue more than 15000.

22. Discuss the importance of normalization in DBMS. Describe 1NF, 2NF and 3NF with appropriate examples.

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Model Question

Full Marks: 60
Pass Marks: 30

BIM Fourth Semester IT241: Operating System

Group A

Brief answer questions:

Attempt all questions.

(10 X 1=10)

1. What do you mean by system call?
2. List out the different types of Kernels.
3. What is the primary function of process control box?
4. What is a race condition in concurrent programming?
5. Define resource allocation graph.
6. What is variable partitions strategy in memory allocation?
7. Explain the term paging in virtual memory.
8. What is the purpose of a file system in an operating system?
9. Why operating system security is needed?
10. What is the advantage of distributed operating system over centralized operating system?

Group B

Short Answers Questions

Attempt any five questions.

(5 × 3= 15)

11. How could an operating system that can disable interrupts implement semaphores?
12. Discuss the advantages and disadvantages of preemptive and non-preemptive scheduling algorithms.
13. Explain the difference between logical and physical addressing in the context of memory management.
14. Explain how a direct memory access operation works.
15. Describe the concept of a critical section and how it is managed in concurrent programming.
16. Compare among Windows, Linux, and Mobile operating system.

Group C

Long Answer Questions

Attempt any three questions.

(3 × 5 = 15)

17. Discuss the various memory management techniques used in operating systems. Compare and contrast paging and segmentation.
18. Consider the following page reference string 4, 3, 2,1,4,3,5,4,3,2,1,5. How many page faults would occur for FIFO page replacement algorithm assuming 3 frames?
19. Consider a system with five processes: P1, P2, P3, P4, and P5. The arrival time and burst time for each process are as follows:

Process	Arrival Time (ms)	Burst Time (ms)
P1	0	8
P2	1	4
P3	2	9
P4	3	5
P5	4	2

Using the Shortest Job First (SJF) scheduling algorithm, calculate the average waiting time and average turnaround time.

20. Given a disk with 800 cylinders numbered from 0 to 799, and the current position of the disk arm is at cylinder 150. If the disk scheduling algorithm uses the SCAN algorithm and the request queue has the following cylinder requests: 100, 200, 350, 420, 600, 700, 750, 800. Calculate the total distance (in cylinders) the disk arm moves to satisfy these requests.

Group D

Comprehensive Questions

Attempt all questions.

(2 × 10 = 20)

21. What is file system layout? Compare and contrast contiguous allocation and linked list allocation and linked list allocation using table in memory allocation techniques. Explain the advantages and disadvantages of each approach.
22. Explain the concept of deadlock in operating systems. Discuss the four necessary conditions for deadlock to occur and provide examples to illustrate each condition. Describe and compare at least four deadlock handling techniques, including deadlock prevention, avoidance, detection, and recovery.