TRIBHUVAN UNIVERSITY
FACULTY OF MANAGEMENT
Office of the Dean
May 2024

Full Marks: 60
Pass Marks: 30
Time: 3 Hrs.

BIM / Third Semester / IT 236: Microprocessor and Computer Architecture

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

Group "A"

Brief Answer Questions: [10 × 1 = 10]

1. Define Accumulator.
2. What is microoperation?
3. If the content of Register is 1011, what will be its value after Arithmetic right shift?
4. What is the use of W and Z Register in 8085 microprocessor?
5. List out any four Data transfer instruction.
6. Define I/O interface.
7. Define register indirect addressing mode.
8. What is cache hit ratio?
9. What is resource conflict problem?
10. List any three characteristics of 8085 microprocessor.

Group "B"

Short Answer Questions: (Attempt any FIVE Questions) [5 × 3 = 15]

11. Write an Assembly language program to swap two 8-bit numbers
12. Explain the hardware organization of associative memory.
13. Explain push and pop operations in Register stack.
14. Describe flags register present in 8085 microprocessor.
15. Explain 4-bit binary adder subtractor.
16. Describe Interrupt Initiated I/O.

Group "C"

Long Answer Questions: (Attempt any THREE Questions) [3 × 5 = 15]

17. Explain any three types of program control instruction.
18. Multiply + (15) with + (5) using signed magnitude multiplication algorithm.
19. Illustrate and explain four segment instruction pipeline.
20. Explain any two types of cache mapping techniques.

Group "D"

Comprehensive Answer / Case / Situation Analysis Questions: [2 × 10 = 20]

21. Illustrate and explain pin configuration 8085 microprocessor.

22. Explain any ten types of addressing mode used in basic computer with your own example.

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BBA / BIM / BBM / Third Semester / STT 201: Business Statistics

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

Group "A"

Brief Answer Questions:

[10 × 1 = 10]

1. Find the quartile deviation if first and third quartiles are 18 and 30 respectively.

2. Calculate the combined mean from the following information.

	Group A	Group B
Mean	65	60
Number of observations	40	60

3. The coefficient of correlation between two variable X and Y is 0.48. The covariance is 36. The variance of X is 16. Find the standard deviation of Y.

4. In a moderately asymmetrical distribution, the mode and mean are 32 and 35 respectively. Calculate the median.

5. Calculate the Pearson's Coefficient of skewness when mean, mode and standard deviation are 25, 20 and 10 respectively.

6. Given $\lambda = 1.2$ for a Poisson distribution, find $p(x = 4)$.

7. If a random sample of size 36 is drawn from a finite population 400 units without replacement, then find the standard error of the sample mean if the population s.d. is 12.

8. Given that $P(A) = \frac{1}{3}$, $P(B) = \frac{3}{5}$ and $P(A \cap B) = \frac{1}{15}$ then find out the value of $P(A \cup B)$.

9. If first quartile and third quartile of a distribution are 28 and 52 and their 90th and 10th percentiles are 61 and 17 respectively then, find the value of kurtosis.

10. List out non-random sampling methods.

Group "B"

Short Answer Questions: (Attempt any FIVE Questions)

[5 × 3 = 15]

11. The following table represents the weekly expenditure of 100 families.

Expenditure	0-20	20-40	40-60	60-80	80-100
No. of Families	14	-	27	-	15

If the mean value is 48 find the missing frequencies.

12. A sample of 500 bulbs of a company shows that an average life of 1400 hours with standard deviation of 30 hours. Find 95% confidence limits for population mean.

13. Calculate coefficient of quartile deviation from the following distribution of expenditure of one thousand households of Pokhara city.

Expenditure (Rs.'00)	No. of households
30-50	54
50-70	100
70-90	140
90-110	300
110-130	230
130-150	125
Above 150	51

14. The mark distribution of 104 students are given below:

Marks	0 - 10	10 - 20	20 - 30	30 - 40	40 - 50	50 - 60	60 - 70
No. of Students	7	8	13	29	35	9	3

Find the lowest marks of the top 10% of the students.

15. Five dice were thrown for 96 times. The observed number of times for getting 4, 5 or 6 was recorded by the table below. Fit the binomial distribution for the given data.

No. of face 4,5 or 6	0	1	2	3	4	5
Observed frequency	2	10	26	35	15	8

16. A committee of 5 is to be formed out of a group of 8 boys and 7 girls. Find the probability that in the committee.

    a. There will be all boys.
    b. There will be all girls.

Group "C"

Long Answer Questions: (Attempt any THREE Questions)   *[3 ×5 = 15]*

17. Calculate the percentile coefficient of kurtosis from the income distribution of sixty-two randomly selected employees of Nepal Bank Limited. Also interpret the result.

Income (Rs '000)	20-30	30-40	40-50	50-60	60-70	Total
No. of employees	7	10	20	18	7	62

18. The following table shows average marks of students in two classes.

	Class A	Class B
No. of students	150	100
Average marks	45	43
Standard deviation of marks	5	4

Test whether there is any significant difference in average marks of students of two classes at 5% level of significance.

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19. The running capacity of two horses is given below, state which is more consistent and why?

Horse A	250	255	280	290	295	300
Horse B	280	282	290	295	298	295

20. Students of a class are given a test. Their marks were normally distributed with mean 60 and standard deviation 5. What percentage of students scored:

   a. More than 65 marks.

   b. Between 50 and 65 marks.

Group "D"

Comprehensive Answer Questions: [20]

21. The following table gives the marks in mathematics and statistics of ten students.

Marks in mathematics	45	70	65	30	90	40	50	75	85	60
Marks in statistics	35	90	70	40	95	40	60	80	80	50

   a. Calculate two regression coefficients.

   b. Calculate two regression lines.

   c. Find Karl Pearson's coefficient of correlation and test its significance.

   d. Estimate the most likely marks in statistics when the marks in mathematics is 52.   [6+6+6+2]

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BIM / Third Semester / IT 237: Web Technology I

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

Group "A"

Brief Answer Questions: [10 × 1 = 10]

1. Why do we need domain name?
2. Define http.
3. List any two features of web 3.0.
4. What is class attributes?
5. Define X query.
6. What are the uses of CSS?
7. Define JSON.
8. Why do we need cookies?
9. What are the types of CSS?
10. What is event?

Group "B"

Short Answer Questions: (Attempt any FIVE Questions) [5 × 3 = 15]

11. What is media query? Describe about ID and class selector.
12. Differentiate between 2-tier and 3-tier architecture.
13. Explain any three HTML 5 sectioning Elements.
14. Write a program to display the numbers which are multiple of 5 from 1 to 100.
15. Why do we need to handle exception in JAVA script? Justify with an example.
16. When do we use external CSS? Give an appropriate example.

Group "C"

Long Answer Questions: (Attempt any THREE Questions) [3 × 5 = 15]

17. Write JavaScript and HTML code to display multiplication table for inputed number.

USER ENTERED NUMBER : N	
N * 1	Result
N * 2	Result
N * 3	Result
N * 4	Result

18. What are the parameters that define responsive wed design? Explain.

19. List any two paired tags. What is the use of hyperlink? Illustrate with an example.

20. Write a JQuery code to hide all the div with class hide as soon as the user clicks on the hide button and show the div as soon as user clicks on show button.

Group "D"

Comprehensive Answer / Case / Situation Analysis Questions:

$[2 \times 10 = 20]$

21. Create a HTML signup form with fields Name, Email, Password, Age. Validate the form using JavaScript. All of the fields should not be empty. The Email address should be a valid email, the password should be of length at least 6 and should start with alphabet and end with digit. The age should be between 8 and 60.

22. How do you write and retrieve cookies? Write and XML and DTD to describe "Book" as root element that includes title, author, price and date of publication.

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Full Marks: 60
Pass Marks: 30
Time: 3 Hrs.

BIM / Third Semester / IT 238: Data Structure and Algorithms

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

Group "A"

Brief Answer Questions: *[10 × 1 = 10]*

1. List any two properties of Algorithm.
2. Why do we always do worst case analysis?
3. Differentiate between data type and ADT.
4. Write any one limitation of circular linked list.
5. What is skip list?
6. How do you create a node in singly linked list?
7. Define overflow and underflow.
8. What is enqueue and dequeue operation?
9. Why do we need to balance BST?
10. Create binary tree of string "apple", "ball", "cat" and "ant".

Group "B"

Short Answer Questions: (Attempt any FIVE Questions)   *[5×3 = 15]*

11. Illustrate the use of priority queue with an example.
12. Convert the infix expression (A + B) * C into postfix expression.
13. How do you compute factorial of any given positive integer using tail recursion?
14. Explain insertion and deletion operation is BST.
15. Write an algorithm to delete an item in doubly linked list.
16. Write the algorithm of bubble sort.

Group "C"

Long Answer Questions: (Attempt any THREE Questions)   *[3 ×5 = 15]*

17. Create the Huffman code of given character with frequencies.

    A : 2 , B : 3, C : 5, D : 4

18. Sort the data 8, 6, 5, 4, 3, 10, 9, 1 using quick sort.
19. Describe Kruskal's algorithm to solve minimum spanning tree problem with a suitable example.
20. Construct AVL tree for the data : 22, 27, 29, 8, 5, 13, 28, 2, 2, 7.

Group "D"

21. What are the ways to represent graph? Explain the working mechanism of Floyd Warshall Algorithm.

22. Distinguish between internal and external sorting. What is hash collision and describe different approaches for collision resolution techniques.

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

BIM / Third Semester / ACC 201: Financial Accounting

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

Group "A"

Brief Answer Questions: $[10 \times 2 = 20]$

1. Define realization concept of accounting.

2. Explain the cash basis of accounting.

3. What is cheque?

4. Write short notes on intangible assets.

5. Write any two objectives of preparing trial balance.

6. The following expenses heading are given;

Salaries	50,000
Rent expenses	40,000
Depreciation on office equipment	30,000
Advertisement expenses	10,000

   Required: Closing entries.

7. The following information of C Company are:
   - Foreign currency translation adjustment: Rs (10,000).
   - Gain on revaluation Rs 7,500.
   - Revaluation gain on the company's defined benefit pension plan: Rs 20,000.
   - Share of associates' other comprehensive income Rs 20,000.

   Required: Other comprehensive income

8. The following information in the books of Vargav are:

January 1st	Debit balance of Raghav account is Rs 50,000.
January 5th	Goods sold to Raghav in cash and credit Rs 20,000 and 10,000 respectively.
January 10th	Goods costing Rs 5,000 returns to Raghav because goods are not as specified.
January 15th	Cheque received from Raghav of Rs 35,000 for the settlement of his debt of Rs 40,000.

   Required: Raghav's account

9. XYZ Company purchased a car at the cost of Rs 1,050,000 on 1st Baisakh 2079. The estimated life of the car is 100,000 KMs with salvage value of Rs 50,000. During 2079 and 2080, the car was run for 30,000 KM and 40,000 KM respectively.

   Required: Depreciation for the year 2079 and 2080

10. The following information are given:
   - Carriage outward
   - Repair cost of machine
   - White wash of new building
   - Selling and distribution expenses

   Required: The revenue and capital items

Group "B"

11. Explain deferred revenue expenditure with suitable examples.

12. Why should firms prepare statements of changes in equity?

13. What is value added statement? Explain its advantages.

14. Define generally accepted accounting principles (GAAP) with important features.

15. The bank statement of a company showed a balance of Rs 37,000, however the company balance showed different balance of Rs 35,800. On the investigation the following differences were notified.
    - A cheque of Rs 2,400 was paid by the bank. However, the company recorded Rs 4,200 in its statement.
    - Deposit in transit Rs 5,000
    - A customer's cheque of Rs 4,000 was returned with the bank statement marked NSF.
    - Bank charge Rs 500 for the service provided by the bank
    - Collection of bills receivable for Rs 1,500 and interest on investment Rs 1,000 by the bank.
    - Outstanding cheque Rs 10,000

    Required: Bank Reconciliation Statement.

16. Below is the financial data for the company as of 31st Ashad 2080;

Particulars	Amount	Particular	Amount
Sales revenue	1,000,000	Carriage outward	30,000
Opening stock	40,000	Office and administrative expenses	50,000
Closing stock	50,000	Selling and distribution expenses	42,500
Purchase	475,000	Depreciation	30,000
Interest expenses	7,500	Tax paid	40,000
Wages	50,000	Retained earnings	35,000
Power consumption cost	30,000		

   Required: Value added statement showing dividend paid.

17. Nalanda School acquired a minibus on January 1, 2020, for Rs 1,000,000. They purchased a school van for Rs 500,000 on July 1, 2021. On June 30, 2022, they decided to sell the first vehicle for Rs 480,000 due to operational costs and immediately replaced it with a new school van costing Rs 800,000. Depreciation is to be recorded at a rate of 20% per annum using the straight-line method.

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Required: Vehicle account for the period of three years, from 2020 to 2022, assuming that the financial books are closed on December 31st each year.

Group "C"

Long Answer Questions:(Attempt any THREE Questions) $[3 \times 10 = 30]$

18. "Accounting is the language of business". Comment.

19. Discuss in detail the various users of accounting information and their specific needs. Provide examples of how different user groups rely on accounting data to make informed decisions. [6+4]

20. The trial balance of Radhika Traders as on 31st Ashad 2080 is provided below:

Account heads	Debit (Rs.)	Account heads		Credit (Rs.)
6% Investment	100000	Creditors		108,000
Cash at bank	20,000	Equity shares		500,000
Cash in hand	23,000	Interest received		10,000
Debtors	150,000	Sales revenue		750,000
Direct wages	160,000	Share premium		50,000
Furniture & Fixture	100,000	Accumulated depreciation:		
Goodwill	35,000		Machinery	20,000
Machinery	200,000		Furniture	10,000
Patent	30,000			
Prepaid rent	20,000			
Opening stock	40,000			
Purchases	400,000			
Salaries	170,000			
Total	1,448,000	Total		1,448,000

Additional information

➢ Closing stock is valued at Rs 70,000.
➢ Depreciate fixed assets @ 15% p.a.
➢ Salary still to be paid Rs 10,000.
➢ Prepaid rent expired to the extent of Rs 15,000
➢ The tax rate should be applied @25% on income.

Required:

a. Profit and Loss Statement for the year ending 31st Ashad 2080 as per NFRS.

b. Statement of Financial Position as on 31st Ashad 2080 as per NFRS. [5+5]

21. The following information of Pratima Inc. is given below:

Income Statement for the year 2080

Particulars	2080 (Rs)
Sales Revenue	360,000
Less: Cost of Goods Sold	120,000
Gross Profit	240,000

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Less: Operating Expenses (Including depreciation for the year Rs. 30000)		100,000
Operating profit		**140,000**
Add: Non-operating income and gain		
Profit from sales of Plant (Book value Rs 30000)		10,000
Less: Non-operating expenses and loss		
Premium on redemption of debenture		2000
EBIT		**148,000**
Less: Interest expenses		15,000
EBT		**133,000**
Provision for tax		33,250
Net Profit		**99750**

Position Statement as on 31st Chaitra 2079 and 2080

Liabilities & Equity	2079	2080	Assets	2079	2080
Common Stock	200,000	300,000	Plant and Equipment	190,000	350,000
Retained Earnings	30,000	129,750	Cash	40,000	66,000
Debenture	100,000	80,000	Accounts Receivable	60,000	119,500
Accounts Payable	50,000	60,000	Inventory	95,000	80,000
Interest outstanding	5,000	7,500	Accrued income	10,000	5,000
Provision for tax	10,000	43,250			
	395,000	**620,500**		**395,000**	**620,500**

Further information:

➢ Purchase of equipment assets Rs 220,000.

➢ Dividend paid Rs 60,000.

Required: Cash Flow Statement.

Group "D"

Comprehensive Answer / Case / Situation Analysis Questions: [20]

22. The following financial statement of Jumla Pharmaceuticals Inc., a manufacturing firm for the year ending December 31 with industry average standard are given below:

Income statement for the year 2023

Particulars	2023 (Rs)
Sales Revenue	1000,000
Less: Cost of Goods Sold	600,000
Gross Profit	400,000
Less: Operating Expenses	200,000
EBIT	200000

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	Less: Interest expenses	40,000
	EBT	160,000
	Income Tax Expense	40,000
	Net Profit	120,000

Position Statement as on 31ˢᵗ December 2022 and 2023

Liabilities & Equity	2022	2023	Assets	2022	2023
Equity Share (Par value Rs. 100)	400,000	500,000	Property, Plant & Equipment	350,000	607,000
Retained Earnings	40,000	152,000	Investment	12000	40000
Bond	100,000	80,000	Cash & cash equivalent	20,000	26,000
Accounts Payable	52,000	70,000	Accounts Receivable	150,000	100,000
Outstanding wages	10,000	5,000	Stock of goods	85,000	60,000
Bank overdraft	20,000	30,000	Commission receivable	5,000	4,000
Total	622,000	837,000	Total	622,000	837,000

Ratios	Industry Average	Company result
Current ratio	2:1	?
Quick ratio	1:1	?
Debt to total capital ratio	11%	?
Stock turnover ratio	5 times	?
Total assets turnover ratio	2 times	?
Receivable turnover ratio	10 times	?
Average collection period.	30 days	?
Net profit margin	9%	?
Return on equity	12%	?
Earnings per share	20	?

Required: Calculate and analyze the ratios given above with standards for the year 2023.

[10×2]

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