Tribhuvan University

Faculty of Humanities & Social Sciences

OFFICE OF THE DEAN

2024

Bachelor in Computer Applications
Course Title: Microprocessor and Computer Architecture — **Full Marks: 60**
Code No: CACS 155 — **Pass Marks: 24**
Semester: II — **Time: 3 hours**

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

Group B

Attempt any SIX questions. **[6×5 = 30]**

2. Explain branch instructions in 8085 microprocessor [5]
3. Differentiate between instruction cycle and machine cycle. What are different machine cycles in instructions: STA 2050H and LDA 2060H? [1+2+2]
4. Write a program in assembly language that finds the greatest number among 8 bytes of number stored in the memory locations starting from 5001H. Store the greatest number in 5050H. [5]
5. What is memory mapped I/O? Explain different types of instruction format in a basic computer system. [1+4]
6. What are the different operations in stack organization? Explain. [5]
7. Differentiate between RISC and CISC computer. [5]
8. What is instruction pipelining? Explain in detail. [1+4]

Group C

Attempt any TWO questions. **[2×10 = 20]**

9. What is addressing mode? Explain different addressing modes. [2+8]
10. What is a microprogram? Explain different formats of microinstructions. Draw the design of the control unit. [1+4+5]
11. a. Draw the architecture of 8086 microprocessor. [5]
    b. Write a program in assembly language that copies 10 bytes of data stored in the memory location starting from 8000H to the memory location starting from 9000H. [5]

Tribhuvan University

Faculty of Humanities & Social Sciences

OFFICE OF THE DEAN

2024

Bachelor in Computer Applications
Course Title: English II
Code No: CAEN 153
Semester: II

Full Marks: 60
Pass Marks: 24
Time: 3 hours

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

Group B

Attempt any SIX questions. **[6×5 = 30]**

2. How does "The Land Ironclads" critique the reliance on technology in warfare and its impact on human courage and adaptability?
3. Compose an email to your immediate boss about the arrangements you have made for the upcoming IT fair at your campus premises.
4. What issues should a web designer be concerned about when planning a web page?
5. Make a flow-chart diagram of your dream application.
6. Write a short oral presentation on the impacts of reliance on Artificial Intelligence in today's world.
7. What future condition of the world does the writer present in the story, "But Who Can Replace a Man?"
8. In the following passage, identify any unstated assumptions, and say whether they are assumptions which underlie a basic reason, or assumptions which function as an additional reason, or assumptions which function as an intermediate conclusion.

   Allowing parents to choose the sex of their children could have serious social costs. There would be a higher percentage of males who were unable to find a female partner. Also, since it is true that 90 per cent of violent crimes are committed by men, the number of violent crimes would rise.

Group C

Attempt any TWO questions. **[2×10 = 20]**

9. Suppose you are working as an IT expert in the National Bank of Nepal, and working staff need five laptops for daily operation. Your manager asks you to present a proposal with time, cost, and objectives. Write a short proposal comparing the laptops available in market of at least three renowned companies. Your proposal must include problems, solutions, and findings.
10. If "The Land Ironclads" presents the war fought with weapons, "Burning Chrome" presents the war fought with the computer keyboard. Compare and contrast between the wars presented in these two stories.
11. Evaluate Shirley Taylor's approach to distinguishing between inductive and deductive reasoning. Compare the strengths and limitations of each reasoning method as described in the book, and provide examples to demonstrate their application in real-world problem-solving.

Tribhuvan University

Faculty of Humanities & Social Sciences

OFFICE OF THE DEAN

2024

Bachelor in Computer Applications
Course Title: C-Programming
Code No: CACS 151
Semester: II

Full Marks: 60
Pass Marks: 24
Time: 3 hours

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

Group B

Attempt any SIX questions. **[6×5 = 30]**

2. Define software process model. Explain software development life cycle. [1+4]
3. Explain call by value and call by reference with suitable example. [2.5 +2.5]
4. What is dynamic memory allocation? What are the limitations of static memory allocation? Explain malloc ( ) and calloc( ) function with example. [1+1+3]
5. What is recursion? Write a program to display Fibonacci series up to 15^{th} term using recursion. [1+4]
6. Explain null pointer and void pointer with suitable example. [2.5+2.5]
7. Write a program to draw a circle and rectangle with output text "BCA Exam 2081" using graphics function. [5]
8. What do you mean by conditional statement? Write a program to calculate sum and average of weight of five persons using an array. [1+4]

Group C

Attempt any TWO questions. **[2×10 = 20]**

9. Define cohesion and coupling. What do you mean by keywords, operators and header files? Describe the types of operator used in C programming. [2+3+5]
10. Why do we need a break and continue statement? Differentiate between binary file and text file? Suppose a file named "Number.txt" contains a list of integers. Write a program to extract the prime numbers from that file and write them on "Prime.txt" file. [2+3+5]
11. Differentiate between structure and union. Create a structure "Employee" having Name, Department, Address, Salary, and Age as member functions. Display the name of the employee having aged between 30 and 50 are living in Kathmandu. [3+7]

Tribhuvan University

Faculty of Humanities & Social Sciences

OFFICE OF THE DEAN

2024

Bachelor in Computer Applications
Course Title: Mathematics II — **Full Marks: 60**
Code No: CAMT 154 — **Pass Marks: 24**
Semester: II — **Time: 3 hours**

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

Group B

Attempt any SIX questions. **[6×5 = 30]**

2. Define Indeterminate forms.

   Evaluate : $\lim_{x\to 0} \frac{\tan x - \sin x}{x^3}$

3. Find $\frac{dy}{dx}$ if a) $x = t^2 - 1, y = t^4 - 1$ b) $x^2 + y^2 = \sin xy$.

4. Find from first principle, the derivate of $\sqrt{3x+1}$

5. Using the trapezoidal rule, compute $\int_0^2 (2x^2 - 1)dx$ with 4 intervals. Find the absolute error of approximation from its actual value.

6. Evaluate the following integrals: a) $\int \frac{2x+3}{\sqrt{x^2+3x}}\, dx$ b) $\int e^x \cos x\, dx$

7. Solve the differential equation: $x\frac{dy}{dx} + 2y = x^2 \log x$

8. Using Newton–Raphson method, find a root of $x^3 - x - 4 = 0$ between 1 and 2 to three places of decimal.

Group C

Attempt any TWO questions. **[2×10 = 20]**

9. Using the simplex method, find the optimal solution of the following linear programming problem.

   Maximize, $z = 15x + 12y$

   Subject to, $2x + 3y \le 21$

   $3x + 2y \le 24$

   $x, y \ge 0$

10. a) Using Simpson's $\frac{1}{3}$ Rule, evaluate $\int_0^1 \sqrt{1+2x^2}\, dx$; $h = 0.25$

    b) Find the maximum and minimum values of the function $f(x) = 4x^3 - 15x^2 + 12x - 1$. Also, find the point of inflection.

11. a) Find the area of the region between the curve $y = 4 - x^2$, $0 \le x \le 3$ and the x–axis.

    b) Solve: $\frac{dy}{dx} = \frac{x^2 + y^2}{2x^2}$

$\frac{h}{3}(y_1 + 4y_2 + 2y_3 + 4y_4 + 2y_5 + y_6)$

Tribhuvan University

Faculty of Humanities & Social Sciences

OFFICE OF THE DEAN

2024

Bachelor in Computer Applications
Course Title: Financial Accounting **Full Marks: 60**
Code No: CAAC 152 **Pass Marks: 24**
Semester: II **Time: 3 hours**
Candidates are required to answer the questions in their own words as far as possible.

Group B

Attempt any SIX questions. **[6×5 = 30]**

2. Define accounting. Mention any three functions of accounting.
3. Differentiate between capital and revenue expenditures.
4. The following banking and cash transactions of Chaitra 2079 are given below:
   Chaitra 2 : Business started with cash and bank balance Rs.2,50,000 and Rs. 1,70,000 respectively.
   Chaitra 6 : Goods purchased from Sabina for Rs. 40,000 and 50% amount paid by cheque and balance on cash.
   Chaitra 11 : Purchased goods from Ram for Rs 50,000
   Chaitra 11 : Cash deposited into bank Rs. 25,000.
   Chaitra 12 : Paid for stationary Rs. 15,000.
   Chaitra 17 : Cheque received from Sujina Rs. 4,500 after 10% discount.
   Chaitra 24 : Sold goods for Rs.20,000 and discount allowed Rs.2,000.
   Chaitra 29 : Withdrew cash Rs.20,000 from bank for office use.
   Required: Cash book with cash, bank and discount column.

5. The following information are given in respect of materials transactions during the month of Jestha 2079.

   Jestha 2: Opening balance 1500 units @ Rs. 11
   Jestha 5: Issued 500 units
   Jestha 8: Purchased 500 units @ Rs 12
   Jestha 10: Issued 400 units
   Jestha 12: Purchased 200 units @ Rs 12
   Jestha 13: Returned to store 50 units issued from 10th Jestha
   Jestha 18: Purchased 300 units @ Rs 11
   Jestha 25: Purchased 400 units @ Rs 12
   Jestha 30: Shortage on verification 100 units
   Required: Store ledger under LIFO method
6. Consider the following information as on 31st December 2023
   a) Balance of cash book Rs.20,000
   b) Cheque issued but not presented for payment Rs. 5,000
   c) Cheque received and entered in the bank column of cash book but not deposited into bank for collection Rs. 9,000
   d) Bank charges and commission of Rs. 550 not entered in cash book.
   e) Credit side of cash book overcast by Rs. 3,000
   f) Bank paid electricity bill Rs. 1500 as per instruction

   Required: Bank reconciliation statement.

7. On 1st Baishak 2075 a construction company purchased a machine for Rs. 10,00,000 and paid Rs. 2,00,000 for transportation and installation charges. It purchased another machine for Rs. 7,00,000 on 1st Kartik 2076. On 1st Baishak 2077, the first machine was sold for Rs. 8,00,000 and on the same date another machine was purchased for Rs. 5,00,000. Charge depreciation @ 10% p.a. under fixed installment method.
Required: Machinery account for the first three year

8. Following are the transactions relating to credit sales:
a) Sold to A furniture :
20 Tables @ Rs. 1,000 each
10 Beds @ Rs. 5,000 each
b) Sold to B furniture :
5 Sofa sets @ 10,000 each
10 Beds @ Rs. 5,000 each
Less: 10% Trade discount
c) Sold to K. store on cash:
30 chairs @ Rs. 2000 each
20 small table @ Rs. 600

Required: Sales book and Sales account

Group C

Attempt any TWO questions. **[2×10 = 20]**

9. The following transactions of A Supplier provided to you.
a) Started business with cash Rs,5,00,000 and furniture Rs.40,000
b) Opened bank account at Nepal Bank Ltd. Rs.2,00,000
c) Goods purchased on cash Rs.1,00,000 and credit Rs.2,00,000.
d) Goods sold to Karki store at Rs.2,50,000, partial payment received Rs.50,000 by Cheque.
e) Goods purchased from Himal Supplier Rs. 1,00,000
f) Cash paid Rs.95,000 as full settlement to Himal supplier.
g) Cheque received from Karki store Rs.1,90,000 in full settlement.
h) Purchased computer at Rs. 70,000
i) Bank loan taken from NIC Asia Rs. 3,00,000
j) Goods lost by fire Rs. 15,000 but insurance company accept Rs.10,000 only.
k) Salary Rs.20,000 and electricity bill Rs. 5,000 paid by cheque.
l) Depreciate furniture by Rs.1000
Required a) Journal entries
b) Purchase account, sales account and Accounts payable account

10. The trial balance of a trader at the end of Chaitra 2080 is as under

Partculars	Debit (Rs)	Credit (Rs)
Opening stock (T) Dr	30,000	
Fixed assets (B) Cr	120,000	
Accounts recievable (B) Cr	80,000	
Cash at bank (B) Cr	26,000	
Purchase (T) Dr	2,00,000	
Wages (T) Dr	30,000	
Carriage inward (T) Dr	5,000	
Office salaries (P/L) Dr	25,000	
Bad debt Assets	500	
Sundry expenses (P/L) Dr	1,500	
Insurance premium (P/L) Dr	2,000	
Office rent Dr (P/L)	20,000	
Drawing Dr (B)	15,000	
Capital Cr (B)		1,50,000

Bank loan		50,000
Accounts payable		40,000
Sales		3,00,000
Purchase return		10,000
Commission		5,000
	5,55,000	5,55,000

Additional Information

- Fixed assets depreciated by 10 %
- Provision for bad debt to be maintained @ 5%
- Outstanding rent Rs. 5,000
- Closing stock Rs.40,000

Required: a) Trading account
b) Profit and loss account
b) Balance sheet

11. Define Public limited company with its features. Also differentiate between shares and debentures. [5+5]