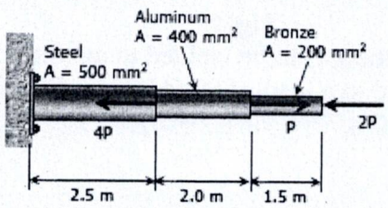
Sylhet Engineering College, Sylhet
(Shahjalal University of Science & Technology)
Department of Civil Engineering

Final Examination, 2024 — **2nd Year 1st Semester**
Course No.: CE 305/ CE 0732 2131 — **Course Title: Mechanics of Solid-I**
Time: 03 (Three) hours — **Full Marks: 60**

N.B. : (i) Answer all questions from each PART (ii) Use separate answer scripts for each PART
(iii) Marks allotted are indicated in the margin (iv) Special Instruction (if any)----------N/A----------

PART- A

1. (a) An aluminum rod is rigidly attached between a steel rod and a bronzed rod as shown in Fig. Axial loads are applied at the position indicated. Find the maximum value of P that will not exceed a stress in steel of 140 MPa, in aluminum of 90 MPa, or in bronze of 100 MPa. **4**



(b) Define poisson's ratio. Show that $\sigma_x = \frac{(\varepsilon_x + \nu\varepsilon_y)E}{1-\nu^2}$ (with usual notations) **3**

(c) State hooks law and show that $\delta = \frac{PL}{AE}$ (with usual notations) **3**

2. (a) Discuss the types of riveted joint with neat sketches. Define the terms back pitch and repeating section with figure. **3**

(b) Compute the total elongation caused by an axial load of 100 kN applied to a flat bar 20mm thick tapering from a width of 120mm to 40mm in a length of 10m as shown in fig-2. Assume E = 200 GPa **4**

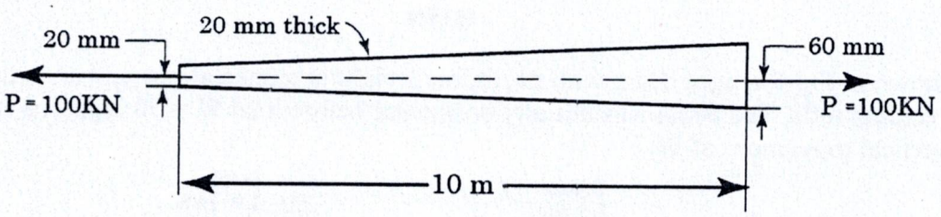


Fig-2

(c) Define shear force and bending moment. Derive a relation among load, shear and moment. **3**

3. (a) A cylindrical pressure vessel is fabricated from plating that has a thickness of 20 mm, the diameter of the pressure vessel is 450 mm, and its length is 2 m. Determine the maximum internal pressure that can be applied if the longitudinal stress is limited to 140 MPa and the circumferential stress is limited to 60 MPa. **4**

(b) A repeating section 180 mm long of a riveted triple row butt-joint of the pressure type is shown in fig-3. The rivet hole diameter is d = 20.5 mm, the thickness of the main plate is t = 14 mm, the thickness of each cover plate is t'= 10 mm. The ultimate stress in shear, bearing and tension are respectively 300 MPa, 650 MPa and 400Mpa. Using a factor of safety of 5, determine the strength of the repeating section and the efficiency of the joint. **6**

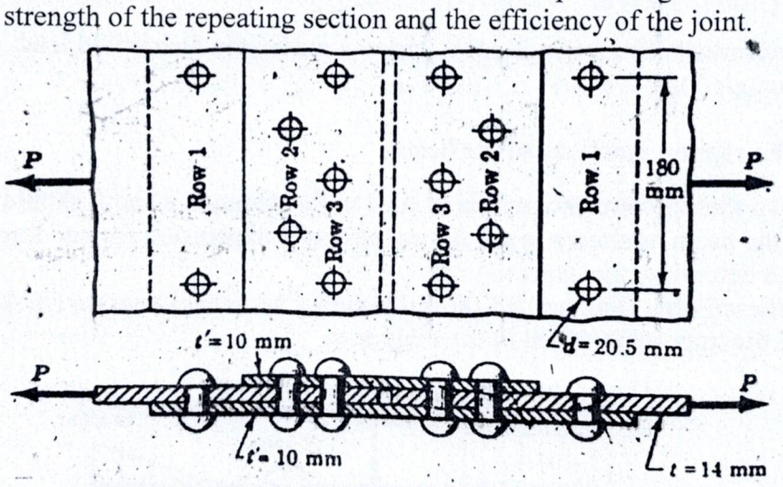


Fig-3

OR

(a) The rigid bar ABC shown in fig-4 is pinned at B and attached to the two vertical rods. Initially, the bar is horizontal, and the vertical rods are stress-free. Determine the stress in the aluminum rod if the temperature of the steel rod is decreased by 40°C. Neglect the weight of bar ABC. **5**

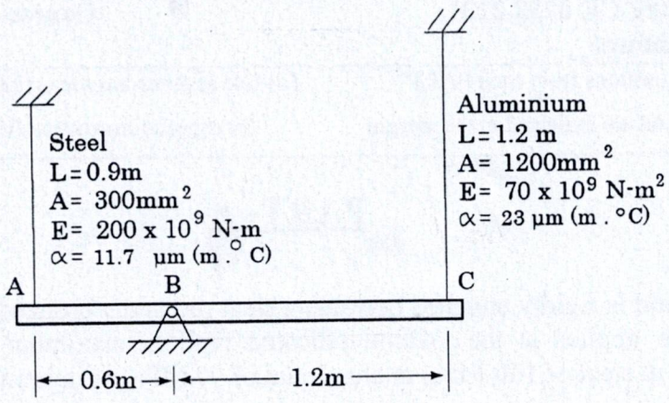
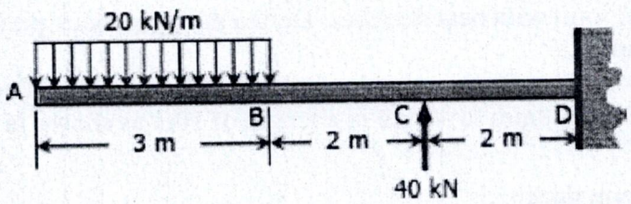


Fig-4

(b) A plate 50 mm wide and 12.5 mm thick is to be welded to another plate by means of parallel fillet welds. The plates are subjected to a load of 50 kN. Find the length of the weld. Assume allowable shear strength to be 56 MPa. **5**

PART- B

4. (a) Cantilever beam loaded as shown in Fig. Draw SFD and BMD. **6**



(b) As shown in Fig-6 a rigid beam with negligible weight is pinned at one end and attached to two vertical rods. The beam was initially horizontal before load W = 50 kips was applied. Find the vertical movement of W. **4**

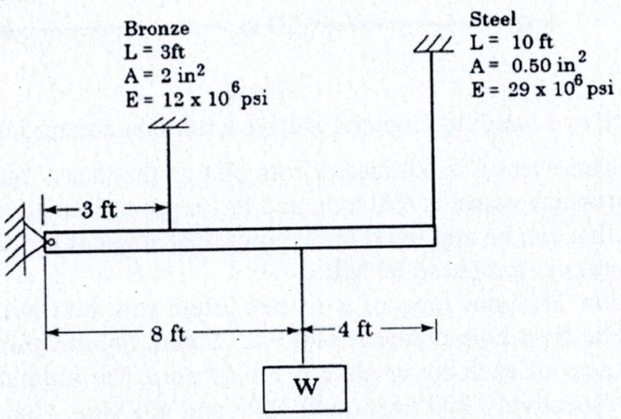


Fig-6

5. Fig-7 shows a determinate beam that is subjected to a uniformly distributed load, a point load, a moment and a triangle load.

(a) Calculate the support reactions of the beam. **2**

(b) If it is known that the zero-moment is located at the distance x and it should be measured from left end of the beam as shown in the figure, write the expression for bending moment, at that location and determine the exact x. **3**

(c) Draw the Shear Force Diagram (SFD) and Bending Moment Diagram (BMD) of the beam and indicate all the important values in the diagrams. **5**

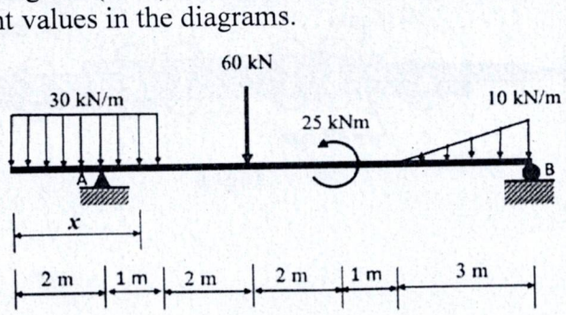


Fig-7

6. **(a)** The T section shown in Fig-8 is the cross section of a beam formed by joining two rectangular pieces of wood together. The beam is subjected to a maximum shearing force of 60 kN. Determine the shearing stress (a) at the neutral axis and (b) at the junction between the two pieces of wood. Draw the stress diagram. **6**

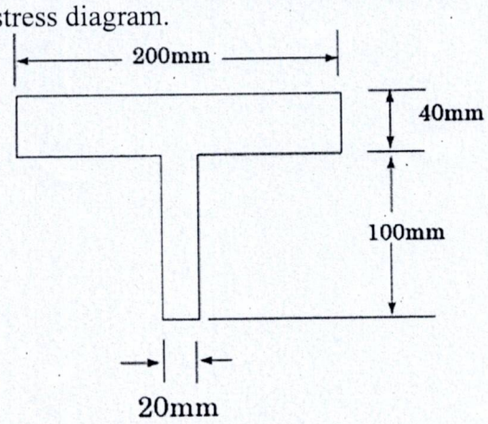


Fig-8

(b) Derive an expression for flexure formula of a beam. **4**

OR

(a) The distributed load shown in Fig-9 is supported by a wide-flange section of the given dimensions. Determine the maximum value of w_o that will not exceed a flexural stress of 10 MPa and a shearing stress of 1.0 MPa. **5**

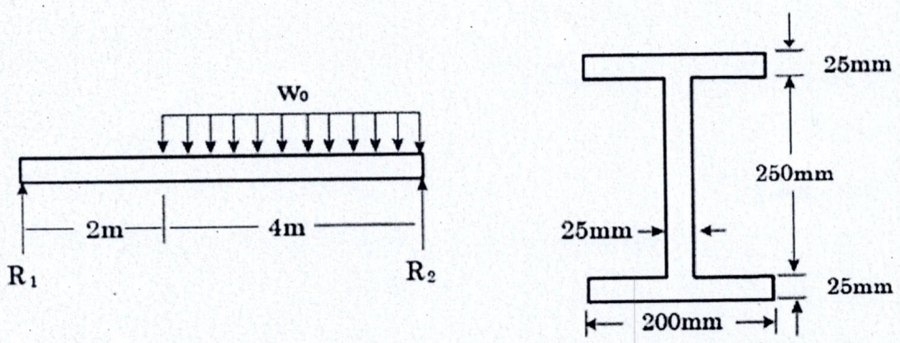


Fig-9

(b) Show that the horizontal shear stress at any point is $\tau = \frac{VQ}{Ib}$ where the symbols are denoted their usual meaning. **5**

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Final Examination, 2024 — **2nd Year 1st Semester**
Course No.: CE 0732 2133 — **Course Title: Engineering Materials**
Time: 03 (Three) hours — **Full Marks: 60**

N.B. : (i) Answer all questions from each PART (ii) Use separate answer scripts for each PART
(iii) Marks allotted are indicated in the margin (iv) Special Instruction (if any)----------N/A-------

PART- A

1. **(a)** Describe the properties of cement and mention the name of the standard test for ordinary portland cement (OPC). **2**

   (b) Short Note i) Quick setting cement ii) Hydration of cement **3**

   (c) Draw a typical flow diagram of the wet process for Portland cement manufacturing. **3**

   (d) Define the terms "initial setting time" and "final setting time." What factors affect the setting of cement? **2**

2. **(a)** What do you mean by the bulking of sand? Determine the mixing ratio for the desired grading from the four given samples. **5**

Sieve size (mm)	(A) % Finer	(B) % Finer	(C) % Finer	(D) % Finer
175	100	-	-	-
150	92	-	-	-
100	35	100	-	-
75	12	90	-	-
50	2	25	100	-
37.5	0	10	95	-
25	0	6	35	100
19	0	0	6	96
9.5	0	0	4	30
4.75	0	0	0	5

Desired grading	
Sieve size (mm)	% Finer
150	100
125	90
100	75
75	55
30	42
37.5	30
25	22
19	20
9.5	6

   (b) What do mean by workability of concrete? **2**

   (c) What is the bleeding and honeycomb? Why do these types of problems arise during concrete casting? How can such problems be minimized? **3**

3. **(a)** Which properties of bricks can be improved by burning? Answer your own judgment. **2**

   (b) Why is the tunnel kiln method for brick burning the most preferred method in Bangladesh? Describe the tunnel kiln method with a neat sketch. **3**

   (c) How can you identify good bricks in field? **2**

   (d) Explain different factors that affect the quality of bricks, and also describe the function of "lime" and "alkalies" as harmful constituents of bricks. **3**

   OR

   (a) Determine the volume in cft of the different ingredients of a cement concrete of the proportion 1:2:4 per cft. **3**

   (b) The cube specimen shows much higher compressive strength than the cylinder specimen. Show the relationship between the compressive strengths of the cube and cylinder samples mathematically. **3**

   (c) Explain different methods for concrete mixing. Draw the typical relationship between compressive strength and mixing time (minutes) for the concrete. **2**

   (d) Write the functions of aggregate and water in concrete. Explain the hydration process with appropriate equations. **2**

PART- B

4.	(a)	Briefly define the terms: (i) water cement ratio, (ii) durability of concrete (iii) tensile strength of concrete, and (iv) joint in concrete	2
	(b)	Define the admixture? What is the reason for the using of admixture in concrete?	3
	(c)	Draw a neat sketch of the compressive strength vs. W/C ratio at different curing days.	3
	(d)	What are the causes and effects of sulfate attack on concrete, and what solutions exist to address this issue?	2
5.	(a)	Write the advantages of timber over other construction materials	2
	(b)	What do you mean by exogenous trees? Draw the typical growth pattern of an exogenous wood	3
	(c)	What are the objectives of seasoning timber? Briefly describe the various methods for seasoning timber.	2
	(d)	How is synthetic rubber made? Explain why synthetic rubber is superior to natural rubber and write the forms of rubber.	2+1
6.	(a)	Write a short note on: (i) poor lime, (ii) cambium layer, and (iii) sapwood	1.5
	(b)	What is vulcanization? Which type of change is observed in plastic due to vulcanization?	2.5
	(c)	What do you mean by slaking? Mention different methods of slaking.	3
	(d)	Explain the term "hydraulicity". What factors are responsible for the hydraulicity of lime?	3

OR

	(a)	Describe the main constituents of paints and their functions in paint	3
	(b)	Classify different types of plastics with appropriate examples. What is FRP? Describe different types of FRP.	3
	(c)	What is Ferro cement and how it is used?	2
	(d)	Briefly describe the engineering properties of plastic.	2

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Final Examination, 2024 — **2nd Year 1st Semester**
Course No.: CE 309/CE 0541 2135 — **Course Title: Numerical Analysis**
Time: 02 (Two) hours — **Full Marks: 60**

N.B. : (i) Answer all questions from each PART (ii) Use separate answer scripts for each PART
(iii) Marks allotted are indicated in the margin (iv) Special Instruction (if any)----------N/A--

PART- A

1. **(a)** What is the difference between explicit and implicit methods of solving partial differential equation? What is the advantage of the implicit method? **5**

(b) A civil engineering team is working on a project to design three different types of concrete mixtures for constructing a building foundation. The total weight of the materials used in the three mixtures must meet specific requirements to ensure strength and stability. **10**
The first mixture uses a combination of cement, sand, and gravel, and the total weight of these materials is 7 tons. For the second mixture, the amount of cement remains the same, but double the amounts of sand and gravel are used, resulting in a total weight of 13 tons. For the third mixture, the amount of sand is tripled while keeping the amount of cement and gravel the same as in the first mixture, resulting in a total weight of 13 tons. Using the **Gauss-Jordan** method, determine how many tons of cement, sand, and gravel are used in the first mixture to meet the specified weights for each mixture.

2. **(a)** Fit a parabola of the form of $y = ax^2 + bx + c$ to the following data. **8**

X	1	2	3	4
Y	1.7	1.8	2.3	3.2

(b) Find a negative root of $x^3 - 2x + 5 = 0$, correct to three decimal places, using **Successive Approximation** method. **7**

OR

(a) Using **Lagrange's interpolation** formula, find the form of the function $y(x)$ from the following table. **10**

x	0	1	3	4
y	-12	0	12	24

(b) Solve the following using Romberg's Quadrature **5**

$$I = \int_1^3 \frac{1}{2x+3}\,dx$$

PART- B

3. **(a)** In a situation where high accuracy is needed for solving a system of ordinary differential equations modeling heat transfer in a building, would you choose the **Euler** method or the **Runge-Kutta** method? Explain your preference considering both accuracy and computational effort. **3**

(b) Find a root of an equation $5x\log_{10}x - 6 = 0$ correct to three decimals using the **Bisection** method **6**

(c) Find a real root of the equation $x = e^{-x}$, using the **Newton-Raphson** method. Correct to four decimal places. **6**

4. **(a)** Evaluate $\int_0^1 \frac{dx}{1+x}$ by using **8**
(i) **Trapezoidal** rule, (ii) **Simpson's** ⅓ rule, and (iii) **Compare** the results with the actual value. Take $h = 0.5$.

(b) Using **Gauss-Seidel** solve the set of equations below. **7**
$28x + 4y - z = 32$, $2x + 17y + 4z = 35$, and $x + 3y + 10z = 24$.

OR

(a) Using the second-order **Runge-Kutta** method, find $y(0.1)$ and $y(0.2)$ for $y' = y - x$; $y(0) = 2$. **7**

(b) Solve $\frac{dy}{dx} = 1 + y,\ y(0) = 0$ in the range of [0,0.2] using (a) **Euler's** method, and (b) **modified Euler's** method. **8**

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Final Examination, 2024 — **2nd Year 1st Semester**
Course No.: MATH 303 /MAT 0541 2103 — **Course Title: Vector Analysis, Laplace Transform, Fourier Analysis & Harmonic Functions**
Time: 03 (Three) hours — **Full Marks: 60**

N.B.: (i) Answer all questions from each PART (ii) Use separate answer scripts for each PART
(iii) Marks allotted are indicated in the margin (iv) Special Instruction (if any) ----------N/A------

PART- A

(Answer all questions)

1. **(a)** The diagonals of a parallelogram are given by the vector $\vec{A} = 3\hat{\imath} - 4\hat{\jmath} - \hat{k}$, $\vec{B} = 2\hat{\imath} + 3\hat{\jmath} - 6\hat{k}$. Show that the parallelograms are rhombus, determine the length of its side and its angle. **04**

   (b) Solve: $\frac{d\vec{Y}}{dt} = \vec{X}$, $\frac{d\vec{X}}{dt} = -\vec{Y}$. **04**

   (c) If $\vec{A} = x^2yz\hat{\imath} - 2xz^3\hat{\jmath} + xz^2\hat{k}$ then find $\frac{\partial^2 A}{\partial x \partial y}$ and $\frac{\partial^2 A}{\partial y \partial x}$ **02**

2. **(a)** If $\vec{A} = x^2y\,\hat{\imath} - 2xz\hat{\jmath} + 2yz\hat{k}$,Find curl (curl $\vec{A}$) **03**

   (b) Prove that $\vec{\nabla} \times (\vec{A} + \vec{B}) = \vec{\nabla} \times \vec{A} + \vec{\nabla} \times \vec{B}$ **03**

   (c) Show that $\vec{\nabla}^2(\frac{1}{r}) = 0$ **04**

3. **(a)** If $\vec{F} = 3xy\hat{\imath} - y^2\hat{\jmath}$ evaluate $\int_c F.dr$ where c is the curve in the xy plane, $y = 2x^2$,from (0,0) to (1,2) **05**

   (b) Evaluate $\iint_s \vec{A}.\hat{n}\, ds$, where $\vec{A} = z\hat{\imath} + x\hat{\jmath} - 3y^2z\hat{k}$ and S is the surface of the cylinder $x^2 + y^2 = 16$ included in the first octant z = 0 and z = 5 **05**

   OR

   (a) If $\vec{\nabla}\emptyset = 2xyz^3\hat{\imath} + x^2z^3\hat{\jmath} + 3x^2yz^2\hat{k}$ find $\emptyset(x,y,z), if\ \emptyset(1,-2,2) = 4$ **04**

   (b) Verify Green's theorem for $\oint_c (2x - y^3)dx - xydy$,Where C is the boundary of the region enclosed by the circle $x^2 + y^2 = 1$, $x^2 + y^2 = 9$. **06**

PART- B

(Answer all questions)

5. **(a)** Define Laplace transformation. Find the Laplace transformation of the following function i) t^3e^{2t} and ii) $e^{-3t}cos2t$ **05**

   (b) Using Laplace transformation to solve the initial value problem: **05**
   $$Y'' + 2Y' + 5Y = e^{-t}sint\ , Y(0) = 0, Y'(0) = 1$$

6. **(a)** Find: $L^{-1}\{\frac{3s+7}{s^2-2s-3}\}$ **04**

   (b) Solve using Laplace Transformation: $Y''(t) + 9Y'(t) = cos2t$, if Y (0) = 1, $Y'(0)$ = -1 **06**

7. **(a)** Write about Dirichlet condition for Fourier series with graph. **03**

   (b) Expand the function f(x) = x, 0<x<2 in half range (a) sine series (b) cosine series **07**

   OR

   (a) State and proof Parseval's Identity. **03**

   (b) Solve $\frac{\partial U}{\partial t} = \frac{\partial^2 U}{\partial x^2}$, 0<x<6, t> 0, subjected to the conditions **07**
   U(0,t) = 0, U(6,t) = 0, U(x,0) = $\begin{cases} 1\ , 0 < x < 3 \\ 0\ , 3 < x < 6 \end{cases}$

Sylhet Engineering College Sylhet

Course Code: HUM 0411 2105 Tittle: (Accounting)

Time: 2 hours Credit hour: 2 Full Marks – 60

[Answer all questions from both part. All parts of a question must be answered chronologically]

Part A

1. a. Define accounting? What are the key financial statements in accounting? 5
   b. Why accounting is important for Civil Engineers? 4
   c. How does managerial accounting differ from financial accounting? Explain Generally Accepted Accounting Principles (GAAP)? 6

2 a What is Basic Accounting Equation? 5

b Khan & Co. opened a business in Rampur, on March 01, 2020. On 31 March, the balance sheet showed cash Tk. 9,000, Account receivables Tk. 1,700, Supplies Tk. 600, Office equipment Tk. 6,000, Account payables Tk. 3,600 and Khan's capital was Tk. 13,700. During April the following transactions occurred. 10

2020

April	02	Paid Tk. 2,900 cash on account payables.
April	04	Collected Tk. 1,300 of Account receivables.
April	05	Purchased additional office equipment for Tk. 2,100, paying Tk. 800 in cash and the balance is due in May.
April	16	Withdraw Tk. 1,000 cash for individual use.
April	22	Paid salaries Tk. 1,700, rent for April Tk. 900 and advertising exp. Tk. 300.
April	28	Incurred utility expenses for month on account Tk. 170.
April	30	Received Tk. 10,000 from UCBL money borrowed on a note payable.
April	30	Earned revenue of Tk. 7,000 of which Tk. 2,000 in cash and the balance on account.

Requirement: Prepare a tabular analysis showing balance after each of the April transactions beginning with March 31 balances.

OR

a What are the advantages of journal entry? 3

b Journalize the following transactions in the books of Mr. Roy 2023 April 6

1 He started business with a capital of – Plant 10,000, Bank 8,000, Stock 12,000
2 Bought furniture for resale 5,000 and also for Office decoration 3,000.
3 Paid rent out of personal cash for 2,000
8 Sold furniture out of those for resale 6,000
12 Paid Salary to Mr. X for 1,200
15 Purchased goods from Mr. Mukherjee for cash 3,000
18 Sold goods to Mr. Sen on credit for 8,000
20 Mr. Sen returned goods valued 1,000
22 Received cash from Mr. Sen of 6,500 in full settle.

c Ledger the following Bank account, Mr Sen account and Capital account, Sales, Equipment and Purchase Account. 6

Part B

3. a Define Income statement. 3

b At the end of its first month of operations Z corporation has the following unadjusted trial balance. 12

Z corporation August 31, 2020 Trial Balance		
	Debit (tk)	Credit(tk)
Cash	5,400	
Accounts Receivables	2,800	
Supplies	1,300	
Prepaid Insurance	2,400	
Equipment	60,000	
Notes Payable		40,000
Accounts payable		2,400
Capital		30,000
Drawing	1,000	
Revenue		4,900
Salary and Wages	3,200	
Utilities expense	800	
Advertise	400	
	77,300	77,300

Other information:
1. Insurance expires at the rate of 200 tk per month.
2. 1,000 tk of supplies are on hand at August 31.
3. Monthly depreciation on the equipment is 900 tk.
4. Interest of 500tk on the notes payable has accrued during August.

Requirements:
a. Prepare a worksheet.
b. Prepare balance sheet assuming 35,000 tk of the notes payable for long-term.

4. a What is financial reporting? **3**

b Assume Yo Company has the following reported amounts: **6**

Sales revenue $400,000, Sales discounts $10,000, Cost of goods sold $234,000, and Operating expenses $60,000.
Compute the following: (a) net sales, (b) gross profit, (c) income from operations, and (d) gross profit rate. (Round to one decimal place.)

c The adjusted trial balance columns of Roni Company's worksheet for the year ended December 31, 2020, are as follows. **6**

Items	**Debit (tk)**	**Items**	**Credit(tk)**
Cash	14,500	Accumulated Depreciation on equipment	18,000
Accounts Receivables	11,100	Notes payable	25,000
Inventory	29,000	Accounts Payable	10,600
Prepaid Insurance	2,500	Owners capital	81,000
Equipment	95,000	Sales revenue	5,36,800
Drawings	12,000	Interest Revenue	2,500
Salaries return and allowance	6,700		
Sales discount	5,000		
Cost of Goods Sold	363,400		
Freight-Out	7,600		
Advertising Expense	12,000		
Salaries and Wages Expense	56,000		
Utilities Expense	18,000		
Rent Expense	24,000		
Depreciation Expense	9,000		
Insurance Expense	4,500		
Interest Expense	3,600		
	6,73,900		**6,73,900**

Requirements: Prepare a multiple-step income statement for Rony Company.

OR

Write the short notes: (answer all) **15**

i. Financial accounting
ii. Sarbanes-Oxley Act (SOX)
iii. What is the accounting equation?
iv. Define trial balance, Fiscal Year, Calendar year.

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Final Examination, 2024 — **2nd Year 1st Semester**
Course No: CSE 0011 2113 — **Course Title: Introduction to Computer Language**
Time: 02 (Two) hours — **Full Marks: 60**

N.B. : (i) Answer all the questions from each PART (ii) Use separate answer scripts for each PART
(ii) Marks allotted are indicated in the margin (iv) Special Instruction (if any)------N/A---------

PART-A

1. (a) Teresa is testing a program that has been written by her colleague. Her colleague tells her that the program incorrect algorithm implementation, wrong condition checks.
i) State what her colleague means by "Incorrect algorithm implementation, wrong condition checks." **1**
ii) Identify and describe one other type of error that the program may contain. **1**
iii) Complete the following table by giving the appropriate data type in each case. **4**

Use of variable	Data type
A person's full name	
Whether a user has logged in or not	
The total sales amount for a day	
When the email sent her	

(b) Summarize the rules for naming identifiers/Variables in C. **4**
(c) What key hardware advancement defined fourth generation computers, and when did emerge? Discuss the evolution of computer technology across the different generations. **5**

2. (a) What is case sensitive? Is C programming language case sensitive? **2**
(b) What would happen to X in this expression: X += 99; (assuming the value of X is 99) **2**
(c) Find out the bug following program. **3**

```
#include<stdio.h>
int main{
int a,b,c;
float Area,s;
printf("Enter sides of a triangle\n");
scanf("%d%d%f",&a,&b,&c);
s=(a+b+c)/2;
Area=sqt(s*(s-a)*(s-b)*(s-c));
printf("%.2f",Area);
}
```

(d) *You are designing a health app that helps users understand their body health status. When a user enters their weight and height, your program should calculate their BMI and categorize their health status as Underweight, Normal, Overweight, or Obese. Calculate the BMI using the formula: BMI = weight / (height * height).* **8**
Display their BMI value along with a motivational message tailored to their category.
Write Pseudocode and Algorithm to Categorize BMI that takes a person's weight (in kilograms) and height (in meters) as input, calculates their BMI, and then displays their BMI category based on the following criteria:
Underweight (BMI < 18.5)
Normal (BMI 18.5 to 24.9)
Overweight (BMI 25 to 29.9)
Obese (BMI 30 or more)

Example Output:
Enter your weight in kg: 70
Enter your height in meters: 1.75
Your BMI is 22.86.
You are in the Normal weight range. Keep up your healthy habits!

OR

(a) What is nested loop? Provide an example. **3**
(b) Distinguish between "++C" and "C++" in C with proper example. **3**
(c) Name the types of loops available in C. Write the syntax of 'for' loop in C **3**
(d) Given an integer x, return true if x is a palindrome, and false otherwise. Write a program to check Whether a Number is Palindrome or Not. **6**

Example 1:
Input: x = 121
Output: true
Example 2:
Input: x = -121
Output: false
Example 3:
Input: x = 10
Output: false

PART-B

3. (a) Define perfect number with an example. Name and describe with example the four basic data types in C. **6**
   (b) What are the keywords in C? Choose any three. **3**
   (c) Define debugging. What are bits, bytes, and other units of measure for digital information? **3**
   (d) Write C assignment statements to evaluate the following equations. **3**
   i) $d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$ ii) $V = \pi r^2 h$ iii) $V = \frac{4}{3}\pi r^3$

4. (a) How to declare an array? Provide an example. **3**
   (b) Consider the following code snippet: **6**

```
#include <stdio.h>

int main() {
   int a = 4, b = 3, c = 2, result;
   result = a++ + --b * ++c - b-- + a;
   printf("%d %d %d %d\n", a, b, c, result);
   return 0;
}
```

Explain the role of each increment/decrement operator used in this expression and how it affects the variables a, b, and c.

   (c) Generate Fibonacci Sequence. Write a program generator function that returns a generator object which yields the fibonacci sequence. **6**
The fibonacci sequence is defined by the relation Xn = Xn-1 + Xn-2.
The first few numbers of the series are 0, 1, 1, 2, 3, 5, 8, 13.

Example 1:
Input: callCount = 5
Output: [0,1,1,2,3]
Example 2:
Input: callCount = 0
Output: []

OR

   (a) Why use recursion? **2**
   (b) What are the errors of this code, rewrite the whole code without error- **3**
   (c) **5**

```
#include <stdio.h>
int main() {
   int num = 10;
   if num > 5 {
      printf("Number is greater than 5\n")
   }
   else (num <= 5){
      printf("Number is 5 or less\n");
   return 0;
}
```

(d) Write some applications of C programming language in the field of Civil Engineering. **5**

What will be the output of the following C code?

```
#include <stdio.h>
int main()
{
 int i,j,k;
   for(i=0, j=0, k=0; i<7, k<11, j<13;i++)
   {
      printf("%d %d %d\n",i,j,k);
      j+=2;
      k+=3;
 }
}
```