

ROYAL UNIVERSITY OF DHAKA

Program: B.Sc. (HON'S) in CSE/CSIT

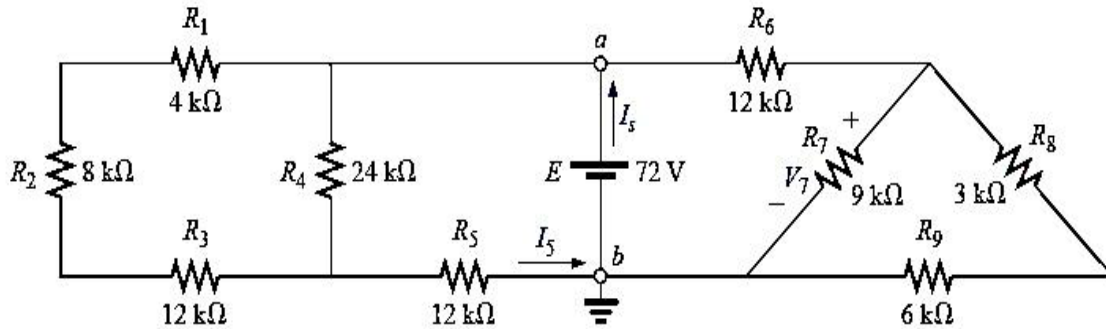
Course Code & Title: EEE 101-Electrical Engineering (Evening)

Course Teacher: Kanti Bhusan Roy Kawshik (01924008069, kanti.kawshik@royal.edu.bd)

Assignment

Assignment Topic:

Calculate the indicated currents and voltage for the following circuit:



Submission deadline: 25th February, 2021.

ROYAL UNIVERSITY OF DHAKA

Program: B.Sc. (HON'S) in CSE/CSIT

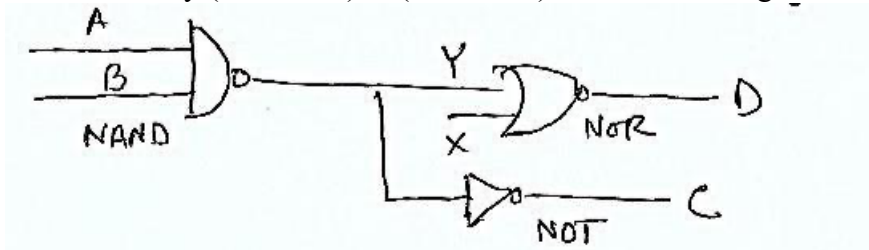
Course Code & Title: EEE 103 & Electronics Engineering (Evening)

Course Teacher: Kanti Bhusan Roy Kawshik (01924008069, kanti.kawshik@royal.edu.bd)

Assignment

Assignment Topic:

Find the Rise and Fall delay (A=0, B=0) & (A=1, B=1) for the following circuit:



Submission deadline: 25th February, 2021.

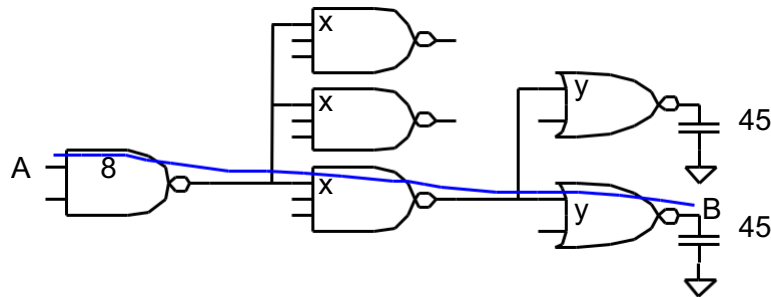
ROYAL UNIVERSITY OF DHAKA

Program: B.Sc. (HON'S) in CSE/CSIT

Course Code & Title: EEE 105: VLSI (Evening)**Course Teacher:** Kanti Bhusan Roy Kawshik (01924008069, kanti.kawshik@royal.edu.bd)**Assignment**

Assignment Topic:

Find logical, branch, path, electrical, stage effort, parasite delay and minimum path delay from the following circuit.

**Submission deadline: 25th February, 2021.**

ROYAL UNIVERSITY OF DHAKA

Program: B.Sc. (HON'S) in CSE/CSIT

Course Code & Title: EEE 106 & Telecommunication (Day)**Course Teacher:** Kanti Bhusan Roy Kawshik (01924008069, kanti.kawshik@royal.edu.bd)**Assignment**

Assignment Topic:

Draw and explain radio communication system. Explain modulation consideration information and carrier. Calculate the size of antenna when, $f = 1.6$ KHZ.**Submission deadline: 25th February, 2021.**

ROYAL UNIVERSITY OF DHAKA

Program: MSCSE

Course Code & Title: MS 511: Digital Logic Design**Course Teacher: Rowjatul Zannat Eshita****(Contact No: 01675742407, Mail: rowjatul.eshita@royal.edu.bd)****Assignment Submission deadline: 25th February, 2021****Assignment Topic:**

Draw the logic diagram for the following expressions: $ABC + AB\bar{C} + A\bar{B}C + \bar{A}BC$, $\overline{ABC\bar{D}} + \overline{ABC}D + \bar{A}B\bar{C}D + \bar{A}BCD$. Simplify the following expression using the Karnaugh Map: $F(A, B, C, D) = \sum (1, 3, 7, 11, 15)$, $F(x, y, z) = \bar{x}yz + \bar{x}y\bar{z} + x\bar{y}z + x\bar{y}\bar{z}$

ROYAL UNIVERSITY OF DHAKA
 Program: B.Sc. (HON'S) in CSE/CSIT
Course Code & Title: MAT 106: Numerical Methods (Evening)
Course Teacher: Rowjatul Zannat Eshita (Contact No: 01675742407, Mail: rowjatul.eshita@royal.edu.bd)

Assignment Submission deadline: 25th February, 2021

Assignment Topic:

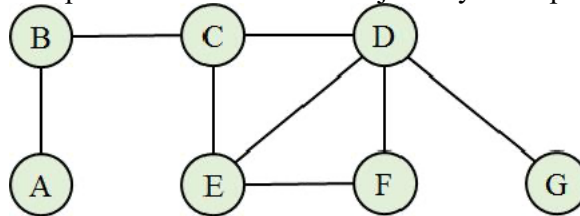
If $2/3$ is approximately by 0.6667, find absolute error and relative error. Evaluate the polynomial $f(x) = 2x^5 - 3x^3 + x^2 + 15$, using Horner's rule at $x = 1$. Use the false position method to estimate the root of the equation: $f(x) = x^3 + 2x^2 + 10x - 20 = 0$ with the range $1 < x < 3$.

ROYAL UNIVERSITY OF DHAKA
 Program: B.Sc. (HON'S) in CSE/CSIT
Course Code & Title: CSE 133: Data Structure & Algorithm (Evening)
Course Teacher: Rowjatul Zannat Eshita
(Contact No: 01675742407, Mail: rowjatul.eshita@royal.edu.bd)

Assignment Submission deadline: 25th February, 2021

Assignment Topic:

Write down the differences between an algorithm and a program. Evaluate an arithmetic expression from infix to postfix: $5 * (12 / 2) - (12 + 4)$. Represent the Undirected Graph given below in Adjacency matrix representation form and Adjacency list representation form:



ROYAL UNIVERSITY OF DHAKA
 Program: B.Sc. (HON'S) in CSE/CSIT
Course Code & Title: CSIT 326: System Analysis & Design (Day)
Course Teacher: Rowjatul Zannat Eshita
(Contact No: 01675742407, Mail: rowjatul.eshita@royal.edu.bd)

Assignment Submission deadline: 25th February, 2021

Assignment Topic:

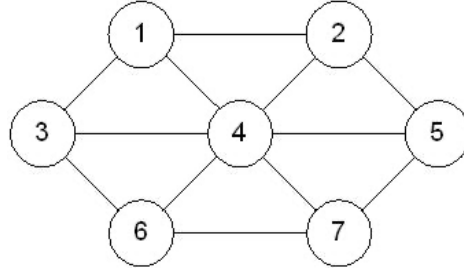
Define System. Discuss about different types of systems. Who is System Analyst? What is the role of system analyst? What is the importance of feasibility study? Describe different types of information system. Write down the differences among different process models.

ROYAL UNIVERSITY OF DHAKA Program: B.Sc. (HON'S) in
 CSE/CSIT **Course Code & Title: CSE 231: Computer
 Algorithm (Day) Course Teacher: Rowjatul Zannat Eshita**
 (Contact No: 01675742407, Mail:
rowjatul.eshita@royal.edu.bd)

Assignment Submission deadline: 25th February, 2021

Assignment Topic:

Write down the difference between an algorithm and a program. Sort the given list using selection sort algorithm: 13, 2, 9, 4, 18, 45, 37, 63. Evaluate an arithmetic expression to expression tree: $54 + ((12 / 2) * 2) - 10$. Represent the Undirected Graph given below:



ROYAL UNIVERSITY OF DHAKA
 Program: B.Sc. (HON'S) in CSE/CSIT (Eve)
Course Code & Title: CSE-135 & Discrete Mathematics
 Course Teacher: Subhra Prosun Paul (01675932517, subhra.paul@royal.edu.bd)

Assignment

Assignment Topic:

'Conjunction, disjunction & negation are the three basic operations of propositional logic'- Explain the statement. Give the concept on tautology & contradiction with examples.

Submission deadline: 25th February, 2021.

ROYAL UNIVERSITY OF DHAKA
 Program: B.Sc. (HON'S) in CSE/CSIT(Eve)
Course Code & Title: CSE 233 & Operating System
 Course Teacher: Subhra Prosun Paul (01675932517, subhra.paul@royal.edu.bd)

Assignment

Assignment Topic:

Give the concept of Operating system with figure. Classify different types of operating systems.

Submission deadline: 25th February, 2021.

ROYAL UNIVERSITY OF DHAKA
 Program: B.Sc. (HON'S) in CSE/CSIT(Eve)
Course Code & Title: CSE 131 & Digital Electronics
 Course Teacher: Subhra Prosun Paul (01675932517, subhra.paul@royal.edu.bd)

Assignment

Assignment Topic:

Explain the basic concept of number system. Explain digital circuit. What are the merits & demerits of digital circuit?

Submission deadline: 25th February, 2021.

ROYAL UNIVERSITY OF DHAKA
Program: B.Sc. (HON'S) in CSE/CSIT(Day)
Course Code & Title: CSE 133 & Data Structure and Algorithm
Course Teacher: Subhra Prosun Paul (01675932517, subhra.paul@royal.edu.bd)
Assignment

Assignment Topic:

How data can be organized in computer memory? Is there any relationship among program, data structure and algorithm? Explain.

Submission deadline: 25th February, 2021.

ROYAL UNIVERSITY OF DHAKA
Program: MSCSE
Course Code & Title: MS 521 & Database Concepts
Course Teacher: Subhra Prosun Paul (01675932517, subhra.paul@royal.edu.bd)
Assignment

Assignment Topic:

Explain two tier architecture & three tier architecture of database management system. What are the responsibilities of database administrators (DBA)?

Submission deadline: 25th February, 2021.

ROYAL UNIVERSITY OF DHAKA
Program: B.Sc. (HON'S) in CSE/CSIT
Course Code & Title: CSE 327 & Web Development (Day)
Course Teacher: Md. Nur-E-Arefin (01675025549, nur.arefin@royal.edu.bd)
Assignment

Assignment Topic:

Design & develop a simple E-Commerce website using HTML & CSS. Make the assignment by taking screenshots from your website and describe the procedure.

Submission deadline: 25th February, 2021.

ROYAL UNIVERSITY OF DHAKA
Program: B.Sc. (HON'S) in CSE/CSIT
Course Code & Title: CSE 315 & Artificial Intelligence (Day)
Course Teacher: Md. Nur-E-Arefin (01675025549, nur.arefin@royal.edu.bd)
Assignment

Assignment Topic:

How can Artificial Intelligence (AI) be dangerous? Why the recent interest in AI safety?

Submission deadline: 25th February, 2021.

ROYAL UNIVERSITY OF DHAKA
Program: B.Sc. (HON'S) in CSE/CSIT
Course Code & Title: EEE 106 & Telecommunication (Eve)
Course Teacher: Md. Nur-E-Arefin (01675025549, nur.arefin@royal.edu.bd)
Assignment

Assignment Topic:

Write about Telecommunication Network Model. Explain each and every term.

Submission deadline: 25th February, 2021.

ROYAL UNIVERSITY OF DHAKA
Program: B.Sc. (HON'S) in CSE/CSIT
Course Code & Title: CSIT 331 & Advance Computer Network (Eve)
Course Teacher: Md. Nur-E-Arefin (01675025549, nur.arefin@royal.edu.bd)
Assignment

Assignment Topic:

What are some common attacks? Explain network attacks, web attacks and OS attacks.

Submission deadline: 25th February, 2021.

ROYAL UNIVERSITY OF DHAKA
Program: B.Sc. (HON'S) in CSE/CSIT
Course Code & Title: CSIT 313 & Computer Network (Eve)
Course Teacher: Md. Nur-E-Arefin (01675025549, nur.arefin@royal.edu.bd)
Assignment

Assignment Topic:

Explain network edge and network core briefly.

Submission deadline: 25th February, 2021.

ROYAL UNIVERSITY OF DHAKA
Program: MSCSE
Course Code & Title: MS 611: Advanced Artificial Intelligence
Course Teacher: Hasan Abdullah (01681523656, hasan.abdullah@royal.edu.bd)
Assignment

Assignment Topic:

Explain research areas of Artificial Intelligence. Find the truth table of $(P \vee Q) \wedge \neg Q \Rightarrow P$. Convert to First order logic of (i) Every man respects his parent, (ii) All birds fly, (iii) Some boys play cricket. What is probability, experiment and event? Describe axioms of probability. What are Mean, Variance and Standard deviation? Briefly describe conditional probability.

Submission deadline: 25th February, 2021.

ROYAL UNIVERSITY OF DHAKA
Program: MSCSE
Course Code & Title: MS 595: Numerical Methods
Course Teacher: Hasan Abdullah (01681523656, hasan.abdullah@royal.edu.bd)
Assignment

Assignment Topic:

Explain bisection method with example. Using false position method find the root of $f(x)=x^3-3$ when $e_{abs}=0.1$, $e_{step}=0.1$ and start with interval $[1,2]$. Find the root of $f(x)=e^{-x}-x$, using newton's raphon method when $x_0=0$. What are the conditions for roots of polynomial? Why gauss elimination method is called forward and back substitution method?

Submission deadline: 25th February, 2021.

ROYAL UNIVERSITY OF DHAKA

Program: B.Sc. (HON'S) in CSE/CSIT

Course Code & Title: CSE 315: Artificial Intelligence (Evening)

Course Teacher: Hasan Abdullah (01681523656, hasan.abdullah@royal.edu.bd)

Assignment

Assignment Topic:

Briefly explain important features of Artificial Intelligence. "Propositional logic is a weak language" explain this statement with example. Convert to First order logic of (i) Caesar was a ruler (ii) All Romans were either loyal to Caesar or hated him (or both) (iii) Everyone is loyal to someone (iv) People only try to assassinate rulers they are not loyal to. Explain actuators, effectors, and sensor in AI.

Submission deadline: 25th February, 2021.

ROYAL UNIVERSITY OF DHAKA

Program: B.Sc. (HON'S) in CSE/CSIT

Course Code: CSE-329, Course Name: Compiler Design (Evening)

Course Teacher: Md Khirul Islam Badal (01748864767, Khirul.badal@royal.edu.bd)

Assignment

Assignment Topic:

What is language processing system? Describe the step of language processing system. What are the differences between compiler and interpreter?

Submission deadline: 25th February, 2021.

ROYAL UNIVERSITY OF DHAKA

Program: B.Sc. (HON'S) in CSE/CSIT/HMT/BBA

Course Code: CSE-109, Course Name: Computer Applications (Day+Evening)

Course Teacher: Md Khirul Islam Badal (01748864767, Khirul.badal@royal.edu.bd)

Assignment

Assignment Topic: Answer All

a) What do you understand by data, information and code? Describe the components of computer.

b) Convert the following numbers to a Decimal number

i) $(27A)_{16}$ ii) $(725)_8$ iii) $(10101)_2$

Submission deadline: 25th February, 2021.

ROYAL UNIVERSITY OF DHAKA**Program: B.Sc. (HON'S) in CSE/CSIT****Course Code: CSE-311, Course Name: Database Management System (Evening)****Course Teacher: Md Khirul Islam Badal (01748864767, Khirul.badal@royal.edu.bd)****Assignment****Assignment Topic:**

What is Database Management System? Describe the applications of database management system. Write Down SQL for the table –

<i>ID</i>	<i>name</i>	<i>dept_name</i>	<i>salary</i>
76766	Crick	Biology	72000
45565	Katz	Comp. Sci.	75000
10101	Srinivasan	Comp. Sci.	65000
83821	Brandt	Comp. Sci.	92000
98345	Kim	Elec. Eng.	80000
12121	Wu	Finance	90000
76543	Singh	Finance	80000
32343	El Said	History	60000
58583	Califieri	History	62000
15151	Mozart	Music	40000
33456	Gold	Physics	87000
22222	Einstein	Physics	95000

- I. Find the max salary of instructors in each department.
- II. Find the avg salary of instructors in Computer Science or Finance Department.
- III. Set the salary 90000 of instructor whose name is Kim

- V. Find names of instructors with salary greater than that of some (at least one) instructor in the History department.

Submission deadline: 25th February, 2021.

ROYAL UNIVERSITY OF DHAKA**Program: B.Sc. (HON'S) in CSE/CSIT****Course Code: CSE-213, Course Name: Object Oriented Programming (Evening)****Course Teacher: Md Khirul Islam Badal (01748864767, Khirul.badal@royal.edu.bd)****Assignment****Assignment Topic:**

What is Object Oriented Programming? Describe the characteristics of OOP. What is the differences structure programming language and object-oriented programming language?

Submission deadline: 25th February, 2021.

ROYAL UNIVERSITY OF DHAKA**Program: B.Sc. (HON'S) in CSE/CSIT****Course Code: CSE-321, Course Name: Computer Peripheral & Interfacing (Evening)****Course Teacher: Md Khirul Islam Badal (01748864767, Khirul.badal@royal.edu.bd)****Assignment****Assignment Topic:**

What is serial communication? Write a short note on using USB to interface a mouse. Compare ISA and EISA I/O bus system.

Submission deadline: 25th February, 2021.

ROYAL UNIVERSITY OF DHAKA
 Program: B.Sc. (HON'S) in CSE/CSIT
Course Code & Title: MAT 105: Statistics and Probability (Eevning)
Course Teacher: Shaikh Afnan Birahim (01711027668, afnan.iatb1@gmail.com)
 Assignment

1. Write two examples of quantitative and qualitative variable.
2. The following data are the number of customers visited a chain shop

28 25 48 37 41 08 19 32 57 26 16 23 23 29 36
31 26 11 21 32 25 52 31 43 35 42 38 33 28 61

Construct a frequency distribution using appropriate class interval and also represent the data by an ogive.

Submission deadline: 25th February, 2021.

ROYAL UNIVERSITY OF DHAKA
 Program: B.Sc. (HON'S) in CSE/CSIT
Course Code & Title: MAT 101 - Coordinate Geometry & Differential Equation
Course Teacher: Dr. Abu Saleh Abdun Noor (01712051947, dr.noor@royal.edu.bd)
 Assignment

Assignment Topic:

1.
 - a) Write down the formula for the rotation of the axes through an angle θ . What is the angle of rotation in removing xy term in the expression $ax^2 + 2hxy + by^2$.
 - b) Determine the equation of the curve $2x^2 + 3y^2 - 8x + 6y - 7 = 0$ when the origin is transferred to the point $(2, -1)$.
 - c) Transform the equation $x^2 - 2xy + y^2 + 2x - 4y + 3 = 0$, when the direction of the axes is turned through an angle 45° whereas the origin of coordinates remains the same.

Submission deadline: 25th February, 2021.

ROYAL UNIVERSITY OF DHAKA
Program: B.Sc. (HON'S) in CSE/CSIT
Course Code & Title: MAT 102 - Integral Calculus & Differential calculus
Course Teacher: Dr. Abu Saleh Abdun Noor (01712051947, dr.noor@royal.edu.bd)
Assignment

Assignment Topic:

1. a) Define domain and range of a function. Find the domain of
 $f(x) = \sqrt{x^2 - 5x + 6}$
- b) Let, $f(x)$ be defined as follows:
$$f(x) = \begin{cases} 1 + x^2 & \text{When } 0 < x < 1 \\ 3 - x^2 & \text{When } 1 \leq x < 2 \\ \frac{x}{2} & \text{When } 2 \leq x < 3 \end{cases}$$
Test the continuity of $f(x)$ at $x=1$, and at $x=2$
- c) If $y = \ln(\sqrt{x-a} + \sqrt{x-b})$, then find $\frac{dy}{dx}$

Submission deadline: 25th February, 2021.

ROYAL UNIVERSITY OF DHAKA
Program: B.Sc. (HON'S) in CSE/CSIT
Course Code & Title: MAT 103 - Linear Algebra & Vector Analysis
Course Teacher: Dr. Abu Saleh Abdun Noor (01712051947, dr.noor@royal.edu.bd)
Assignment

Assignment Topic:

1. a) Define elementary row operations in matrices. Discuss the row echelon form of a matrix. Solve the following system of linear equations by Gaussian elimination method:
$$\begin{aligned} x_1 + 3x_2 - 2x_3 & \quad + 2x_5 & = 0 \\ 2x_1 + 6x_2 - 5x_3 - 2x_4 + 4x_5 - 3x_6 & = -1 \\ & 5x_3 + 10x_4 & + 15x_6 = 5 \\ 2x_1 + 6x_2 & \quad + 8x_4 + 4x_5 + 18x_6 & = 6 \end{aligned}$$
- b) Define a symmetric and a skew-symmetric matrix and give one example for each. Prove that every square matrix is the sum of a symmetric and skew-symmetric matrix.

Submission deadline: 25th February, 2021.

ROYAL UNIVERSITY OF DHAKA
Program: B.Sc. (HON'S) in CSE/CSIT

Course Code & Title: MAT 104 - Complex Variable, Laplace Transformation & Fourier Analysis
Course Teacher: Dr. Abu Saleh Abdun Noor (01712051947, dr.noor@royal.edu.bd)

Assignment

Assignment Topic:

1. a) Define modulus and argument of a complex number. Find modulus and argument of $z = \frac{1-i}{-2-2\sqrt{3}i}$. Hence express it in polar form.
- b) If $|z - 1| = 1$, prove that $\arg(z - 1) = 2 \arg z = \frac{2}{3} \arg(z^2 - z)$.
- c) Sketch: $|3z - 8| = |\bar{z} + 8i|$.

Submission deadline: 25th February, 2021.