

ROYAL UNIVERSITY OF DHAKA

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

Course Code & Title: CSIT 107: Optical Fiber Communication (Eve)

Course Teacher: Ahmed Abdullah (01680076500, ahmed.abdullah@royal.edu.bd)

Assignment

Assignment Topic:

A system has the following characteristics:

Source power=2mW (3dBm)

Source to fiber loss = 5dB

Fiber loss per Km= 0.8 dB/Km

Fiber Length = 60Km

Connector Loss= 1dB (One connector in two 20m)

Fiber to detector loss= 3dB

Receiver sensitivity = -36dBm

Find the loss margin

Submission deadline: 17 December, 2021.

ROYAL UNIVERSITY OF DHAKA

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

Course Code & Title: CSE 231: Computer Algorithm (Day)

Course Teacher: Ahmed Abdullah01680076500, ahmed.abdullah@royal.edu.bd

Assignment

Assignment Topic:

Download the following paper and write a two pages synopsis on that.

Download Link: <https://arxiv.org/pdf/1609.04747.pdf>

Submission deadline: 17 December, 2021.

ROYAL UNIVERSITY OF DHAKA

Program: MSCSE

Course Code & Title: MS 611: Computer Graphics & Animation (M.Sc.)

Course Teacher: Ahmed Abdullah01680076500, ahmed.abdullah@royal.edu.bd

Assignment

Assignment Topic:

Which technique used in Wally

B.(https://en.wikipedia.org/wiki/The_Adventures_of_Andr%C3%A9_%26_Wally_B.)?

Explain briefly.

Submission deadline: 17 December, 2021.

ROYAL UNIVERSITY OF DHAKA

Program: MSCSE

Course Code & Title: MS 671: Object Oriented Programming (M.Sc.)**Course Teacher: Ahmed Abdullah 01680076500, ahmed.abdullah@royal.edu.bd****Assignment**

Assignment Topic:

a) Describe OOP concept considering python.

b) What function does the following recursive function, written in a pseudocode, compute?

```
int f(int x, int[] a)
```

```
{ // function f accepts input: integer x and // integer array a[]. // f computes a value and returns it. if (a.length () == 0) return 0; else if (a.length () == 1) return a[0]; else return f(x, (a[0]*x+a[1],a.tail (). tail ())); }
```

Submission deadline: 17 December, 2021.

ROYAL UNIVERSITY OF DHAKA

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

Course Code & Title: CSE 121: Structure Programming language (Eve)**Course Teacher: Ahmed Abdullah (01680076500, ahmed.abdullah@royal.edu.bd)****Assignment**

Assignment Topic:

a) What is the difference between a defining instance and an external declaration? What are the four important parts of a function? Which three does a caller need to know?

b) Name three uses for the semicolon in C. What would the equivalent code, using a while loop, be for the example

Submission deadline: 17 December, 2021.

ROYAL UNIVERSITY OF DHAKA

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

Course Code & Title: GED 102: Research Project Proposal**Course Teacher: Ahmed Abdullah 01680076500, ahmed.abdullah@royal.edu.bd****Assignment**

Assignment Topic:

What is literature review? Discuss the importance of literature review to conducting a research project.

Submission deadline: 17 December, 2021.

ROYAL UNIVERSITY OF DHAKA

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

Course Code & Title: EEE 103 - Electronics Engineering (Eve)**Course Teacher: KantiBhusan Roy Kawshik (01924008069, kanti.kawshik@royal.edu.bd)****Assignment**

Assignment Topic:

A) Power Diodes: What are they? Explain Everything. (Characteristics & Softness Factor)

B) Calculate the voltage drop V_{DC} and current I_{DC} flowing through a $1k\Omega$ resistor connected to a 240 Vrms single phase half-wave rectifier. Also calculate the average DC power consumed by the load.

Submission deadline: 17 December, 2021.

ROYAL UNIVERSITY OF DHAKA

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

Course Code & Title: CSIT 211 - Digital Logic Design (Eve)**Course Teacher: KantiBhusan Roy Kawshik (01924008069, kanti.kawshik@royal.edu.bd)****Assignment**

Assignment Topic:

- A) Make 4 Channel Demultiplexer using Logic Gates and explain every part of it.
 B) Make a useful 4-to-1 Channel Multiplexer and write down Boolean expression for this 4-to-1 Multiplexer, truth table and demonstrate every part of it.

Submission deadline: 17 December, 2021.

ROYAL UNIVERSITY OF DHAKA

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

Course Code & Title: EEE 101 - Electrical Engineering (Eve)**Course Teacher: KantiBhusan Roy Kawshik (01924008069, kanti.kawshik@royal.edu.bd)****Assignment**

Assignment Topic:

Analyze the given Electric Circuits using Thevenin's Theorem (Open the load resistor, Calculate the open circuit voltage, Open current sources and short voltage sources, Calculate the Open Circuit Resistance, redraw the circuits).

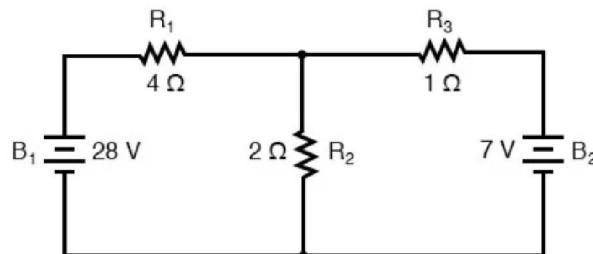


Fig: 1

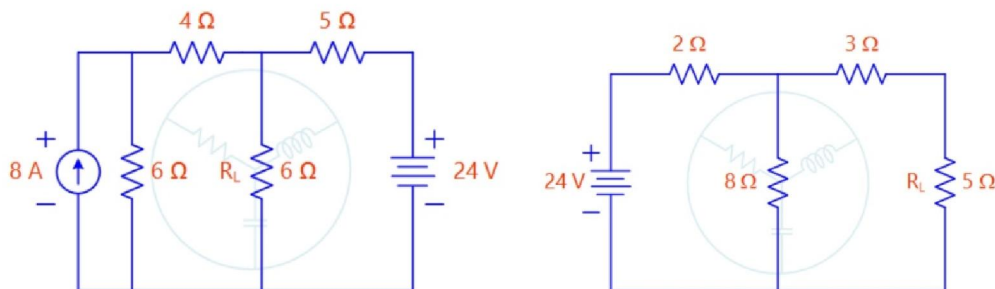


Fig: 1

Fig: 1

Submission deadline: 17 December, 2021.

ROYAL UNIVERSITY OF DHAKA

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

Course Code & Title: CSE 311 - Database Management System (Self Study)**Course Teacher: KantiBhusan Roy Kawshik (01924008069, kanti.kawshik@royal.edu.bd)****Assignment**

Assignment Topic:

- a) Briefly explain the different keys in database management system. What is database normalization? Write a short note on i) 1st normal form and ii) 2nd normal form.

- b) Draw and explain a E-R diagram for a university where the main entity sets are student, course, course offering and instructors. Write a short note on i)3rd normal form and ii) boyce-codd normal form. Write the basic SQL queries.

Submission deadline: 17 December, 2021.

ROYAL UNIVERSITY OF DHAKA
Program: B.Sc. (HON'S) in CSE/CSIT
Course Code: CSE-111, Couse Name: Computer Fundamentals (Day+Eve)
Course Teacher: Shaikh Afnan Birahim (01711027668, afnan.birahim@royal.edu.bd)
Assignment

Assignment Topic:

Explain the principle of duality in Boolean algebra. Describe Object Oriented Programming and its structures. Write the differences between repeater and amplifier. Describe the major elements of internet search engine.

Submission deadline: 17 December, 2021.

ROYAL UNIVERSITY OF DHAKA
Program: B.Sc. (HON'S) in CSE/CSIT
Course Code: CSIT-325, Couse Name: Management Information System (Eve)
Course Teacher: Shaikh Afnan Birahim (01711027668, afnan.birahim@royal.edu.bd)
Assignment

Assignment Topic:

How do you create an E-commerce site? Explain with necessary diagrams. Explain the common traits of a successful entrepreneur. Describe the SDLC process. Should the IT function in a business be centralized or decentralized? Explain.

ROYAL UNIVERSITY OF DHAKA
Program: B.Sc. (HON'S) in CSE/CSIT
Course Code: MAT-105, Couse Name: Statistics and Probability (Day+Eve)
Course Teacher: Shaikh Afnan Birahim (01711027668, afnan.birahim@royal.edu.bd)
Assignment

Assignment Topic:

What is measures of dispersion and standard deviation? Explain Chi square goodness of fit test.

In an office there are 3 computers C1, C2 and C3. Any day any office computer works properly with probability 0.7. Find the probability in a randomly selected day:

- (i) At least two computers work properly
- (ii) No computer works properly

ROYAL UNIVERSITY OF DHAKA

Program: MSCSE

Course Code: MS 691 and Course Title: Data Mining & Warehousing

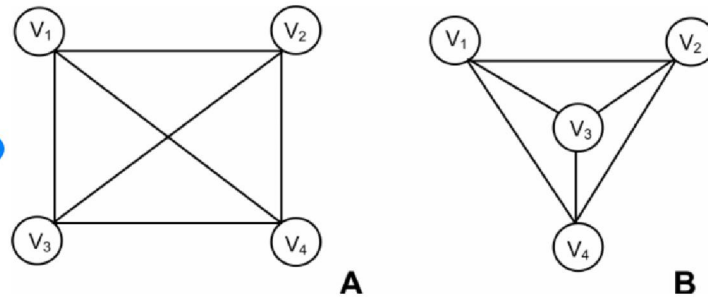
Course Teacher: RowjatulZannatEshita

(Contact No: 01675742407, Mail: rowjatul.eshita@royal.edu.bd)

Assignment

Assignment Topic:

- Differentiate between Classification and Prediction. Write down the advantages and disadvantages of decision trees.
- Describe major clustering approaches. Why do we use Graph Mining? Prove that the following graphs are isomorphic:



Submission deadline: 17 December, 2021.

ROYAL UNIVERSITY OF DHAKA

Program: MSCSE

Course Code: MS 615 and Course Title: Digital Signal Processing

Course Teacher: RowjatulZannatEshita

(Contact No: 01675742407, Mail: rowjatul.eshita@royal.edu.bd)

Assignment

Assignment Topic:

- What is Filter? Draw a direct form diagram for the following recursive difference equation: $y[n] + 0.5y[n-2] - 0.6y[n-4] = 0.8x[n] - 0.2x[n-1] + 0.5x[n-2]$
- Find the output Tabular Digital Convolution if $x[n] = 4\delta[n] - 2\delta[n-1] + 3\delta[n-2] - \delta[n-3]$ and $h[n] = \delta[n] + 2\delta[n-1] - \delta[n-2] + 3\delta[n-3]$ and find the cross correlation of the two sequences $x[n]$ and $y[n]$ represented by, $x[n] = [1, 1, 2, 4],$ $y[n] = [1, 2, 3]$

Submission deadline: 17 December, 2021.

ROYAL UNIVERSITY OF DHAKA
Program: B.Sc. (HON'S) in CSE/CSIT
Course Code: EEE 109 and Course Title: Microcontroller (DAY & EVENING)
Course Teacher: RowjatulZannatEshita
(Contact No: 01675742407, Mail: rowjatul.eshita@royal.edu.bd)
Assignment

Assignment Topic:

- a) What is pipelining? Differentiate between CISC and RISC. Show the pin description of PIC16F84 with an appropriate figure. Discuss the memory organization of PIC microcontroller.
- b) Write down the features of AVR AT90S2313 microcontroller. How many registers are there in AVR microcontroller? Discuss about different types of Arduinos.

Submission deadline: 17 December, 2021.

ROYAL UNIVERSITY OF DHAKA
Program: B.Sc. (HON'S) in CSE/CSIT
Course Code: CSE 321 and Course Title: Computer Peripheral & Interfacing (DAY)
Course Teacher: RowjatulZannatEshita
(Contact No: 01675742407, Mail: rowjatul.eshita@royal.edu.bd)

Assignment

Assignment Topic:

- a) Differentiate between Buffer and Spooler. Describe the developments in Backing Storage Devices. What is Block Driver?
- b) What is PnP? Discuss about different types of ports. Write down the advantages of IDE. Explain PATA and SATA.

Submission deadline: 17 December, 2021.

ROYAL UNIVERSITY OF DHAKA
Program: B.Sc. (HON'S) in CSE/CSIT
Course Code: CSE 323 and Course Title: E-Commerce (DAY)
Course Teacher: RowjatulZannatEshita
(Contact No: 01675742407, Mail: rowjatul.eshita@royal.edu.bd)

Assignment

Assignment Topic:

- a) What is Web hosting? Write down the benefits of Web hosting. Describe the levels of e-commerce packages.
- b) What is EDI network? Describe basic approaches of EDI with its advantages and disadvantages. Discuss about different types of secure communication.

Submission deadline: 17 December, 2021.

ROYAL UNIVERSITY OF DHAKA

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

Course Code & Title: CSE 339: Simulation & Modeling (Eve)

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

Assignment

Assignment Topic:

What is random number? Generate 10 random number using Mid-square random number generator where the seed value is 1829. Explain congruence method for generating 10 random number where $a=13$, $b=1$ and $m=19$.

Submission deadline: 17 December, 2021.

ROYAL UNIVERSITY OF DHAKA

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

Course Code & Title: CSIT-333: Computer Graphics [Eve]

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

Assignment

Assignment Topic:

Why 2D transformation is needed? Briefly explain 3D translation, rotation and scaling. What is anti-aliasing and what does anti-aliasing do?

Submission deadline: 17 December, 2021.

ROYAL UNIVERSITY OF DHAKA

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

Course Code & Title: CSE-323: E Commerce [Eve]

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

Assignment

Assignment Topic:

Briefly explain E Cash and E Cash storage. What are the security requirements in Electronic payment systems? What does Firewall do and what are the types of Firewall? Explain ERP with functional areas.

Submission deadline: 17 December, 2021.

ROYAL UNIVERSITY OF DHAKA

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

Course Code & Title: CSE 233 - Operating System (Eve)

Course Teacher: Md. Nur-E-Arefin (01675025549, nur.arefin@royal.edu.bd)

Assignment

Assignment Topic:

Define Deadlock? Explain Resource-Allocation graph. Describe Bankers algorithm. Discuss different page replacement algorithms. Explain domain of protection. What are the differences between program threats and system threats? Explain the basic Architecture of UNIX/Linux system.

Submission deadline: 17 December, 2021.

ROYAL UNIVERSITY OF DHAKA
 Program: B.Sc. (HON'S) in CSE/CSIT
Course Code & Title: CSE 133 - Data Structure & Algorithm (Eve)
Course Teacher: Md. Nur-E-Arefin (01675025549, nur.arefin@royal.edu.bd)
 Assignment

Assignment Topic:

What is linked list? What are the types of linked list? Explain operation on linked list. Discuss different terminology of a tree. Explain binary tree. Give short notes on different types of Graphs with diagram.

Submission deadline: 17 December, 2021.

ROYAL UNIVERSITY OF DHAKA
 Program: B.Sc. (HON'S) in CSE/CSIT
Course Code & Title: CSE 321 - Computer Peripheral & Interfacing (Eve)
Course Teacher: Md. Nur-E-Arefin (01675025549, nur.arefin@royal.edu.bd)
 Assignment

Assignment Topic:

How Many Ways the Keyboard is Interfaced with the CPU? Describe different Operational Modes of 8279. What are the features of 8259 PIC microprocessor? Draw the basic block diagram of 8254 and describe every block. Describe the pin diagram of 8255. How DMA Operations are Performed on 8257 DMA controller.

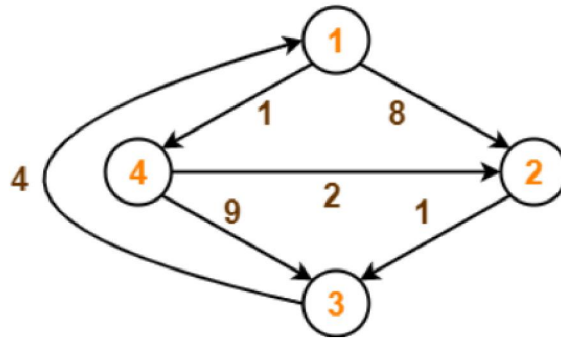
ROYAL UNIVERSITY OF DHAKA
 Program: B.Sc. (HON'S) in CSE/CSIT
Course Code: CSE-231, Course Name: Computer Algorithm (EVE)
Course Teacher: Md Khirul Islam Badal (01748864767, Khirul.badal@royal.edu.bd)
 Assignment

Assignment Topic:

a) Write the definition of planner graph. Why the complete bipartite graph $K_{3,3}$ is not a planner graph. Find the following degree sequence is valid or not -

6	3	6	2	3	6	6	2
---	---	---	---	---	---	---	---

b) What is negative cycle in a graph? Write down the algorithm of Floyd Warshell Algorithm and Find the all-possible shortest path.

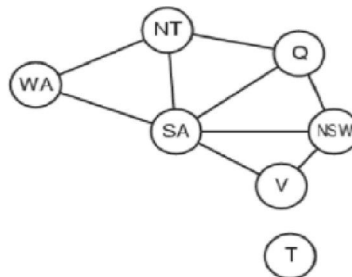


Submission Deadline: 17 December, 2021.

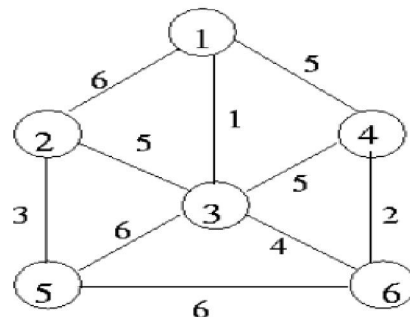
ROYAL UNIVERSITY OF DHAKA
 Program: B.Sc. (HON'S) in CSE/CSIT/HMT/BBA
Course Code: CSE-135, Course Name: Discrete Mathematics (EVE)
Course Teacher: Md Khirul Islam Badal (01748864767, Khirul.badal@royal.edu.bd)
 Assignment

Assignment Topic:

a) What is graph coloring & Chromatic number. Find out the chromatic number for the following graph.



b) Write down the difference between walk & path. Find out the minimum spanning tree using Kruskal Algorithm for the following graph



Submission Deadline: 17 December, 2021.

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

Course Code: CSE-221, Course Name: Microprocessor & Assembly Language (EVE)
Course Teacher: Md Khirul Islam Badal (01748864767, Khirul.badal@royal.edu.bd)
Assignment

Assignment Topic:

a) What is the difference between 80186 & 80188 microprocessor. Write down the structure of 80486 microprocessor. For the memory location whose physical address is specified by 1256Ah, give the address in segment: offset from for segments 1256h and 1240h.

b) Write down the definite of Rotate with an example? Suppose $A = 10101010$ and $B = 110010$. Find the result of following logical math

i. $A \text{ AND } B = ?$

ii. $A \text{ OR } B = ?$

iii. $A \text{ XOR } B = ?$

iv. $A \text{ NAND } B = ?$

Submission Deadline: 17 December, 2021.

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

Course Code: MAT-106, Course Name: Numerical Mathematics
Course Teacher: Md Khirul Islam Badal (01748864767, Khirul.badal@royal.edu.bd)
Assignment for Final (Self Study)

Assignment Topic:

What Backtracking Method and Opening Method. Describe the Homogeneous equation, Linear equation and Polynomial equation with example. Find the forward and backward difference in polynomial equation.

Submission Deadline: 17 December, 2021.