ROYAL UNIVERSITY OF DHAKA
Program: B.Sc. (HON'S) in CSE/CSIT
Course Code & Title: CSE 121/MS 501: Structure Programming (Day + M.Sc.)
Course Teacher: Ahmed Abdullah (01680076500, ahmed.abdullah@royal.edu.bd)

Assignment Topic:
Design a **Library Management System,**
Which perform functions such as add books, return books, issue books, delete record of books issued, view record of books issued, search for books and visitor can buy books.
Submission deadline: 21st April, 2022.

ROYAL UNIVERSITY OF DHAKA
Program: B.Sc. (HON'S) in CSE/CSIT
Course Code & Title: CSE 231: Computer Algorithm (Day)
Course Teacher: Ahmed Abdullah 01680076500, ahmed.abdullah@royal.edu.bd

Assignment Topic:
Describe Dijkstra's algorithm and Breath First Search (BFS) algorithm.
Submission deadline: 21st April, 2022.

ROYAL UNIVERSITY OF DHAKA
Program: B.Sc. (HON'S) in CSE/CSIT
Course Code & Title: MS 602: Visual & Internet Programming (M.Sc.)
Course Teacher: Ahmed Abdullah 01680076500, ahmed.abdullah@royal.edu.bd

Assignment Topic:
How does API work in web development? Briefly explain
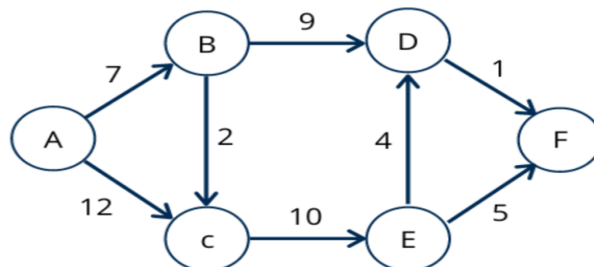Submission deadline: 21st April, 2022.

ROYAL UNIVERSITY OF DHAKA
Program: MSCSE
Course Code: MS 571 and Course Title: Data Structure & Algorithms
Course Teacher: Rowjatul Zannat Eshita
(Contact No: 01675742407, Mail: rowjatul.eshita@royal.edu.bd)

Assignment Topic:
Describe different table data structure. Suppose key values are 141, 211, 232, 624. Find the Hash address of each key value using Division Method with m =7, if collision occurs then use Rehashing Method. Use the algorithm of Quick Sort for sorting the given list: 9, -3, 5, 2, 6, 8, -6, 1, 3. Find the shortest paths for the following graph using Dijkstra's algorithm:

Submission deadline: 21st April, 2022.

ROYAL UNIVERSITY OF DHAKA
Program: B.Sc. (HON'S) in CSE/CSIT
Course Code: CSE 233 and Course Title: Operating System(DAY & EVENING)
Course Teacher: Rowjatul Zannat Eshita
(Contact No: 01675742407, Mail: rowjatul.eshita@royal.edu.bd)

Assignment Topic:
Describe the Banker's Algorithm with an appropriate example. Write down the prevention steps of deadlock. Six batch jobs P1 through P6, arrive at a computer center at almost the same time. They have estimated running times of 15, 5, 17, 3, 10 and 1 minutes. Their Time quantum is 6 minutes and their priorities are 3, 5, 2, 1, 4, 6. For each of the following scheduling algorithms, determine the average waiting time.

       i.   Round Robin
      ii.   Priority Scheduling.
     iii.   First-come, first-served
     iv.   Shortest Job First

Submission deadline: 21st April, 2022.

ROYAL UNIVERSITY OF DHAKA
Program: B.Sc. (HON'S) in CSE/CSIT
Course Code: CSIT 325
Course Title: Management Information System (DAY)
Course Teacher: Rowjatul Zannat Eshita
(Contact No: 01675742407, Mail: rowjatul.eshita@royal.edu.bd)

Assignment Topic:
Describe different forms of Electronic Commerce with proper examples. How can customers pay for products and how you will Risk Mitigation for online transaction? Discuss about different key personal attributes for an entrepreneur. Is SDLC always the best approach for system development? What other methodologies could be used?

Submission deadline: 21st April, 2022.

ROYAL UNIVERSITY OF DHAKA
Program: B.Sc. (HON'S) in CSE/CSIT
Course Code: CSE-337, Couse Name: Pattern Recognition
Course Teacher: Md Khirul Islam Badal (01748864767, khirul.badal@royal.edu.bd)

Assignment Topic: Answer All

    a) Write the definition of Markov Chain Model. Implement the occasionally dishonest casino problem using Viterbi algorithm.
    b) What is Constraint Satisfaction Problem? Write down the diferrences between Constraint Programming approach and Local Search approach. Implement the N Queen problem using Local Search approach.

Submission Deadline: 21th April, 2022

ROYAL UNIVERSITY OF DHAKA
Program: B.Sc. (HON'S) in CSE
Course Code: CSE-335, Couse Name: Multimedia System Design
Course Teacher: Md Khirul Islam Badal (01748864767, khirul.badal@royal.edu.bd)

Assignment Topic: Answer All

a) Write down the definition of Multicast with appropriate diagram. Write down the work process of Real Time Transport Protocol.
b) Write down the definition of Packetization and Streaming. Write down the

characteristics of Networking. Describe the Asynchronous Transfer Mode (ATM).

Submission Deadline: 21ᵗʰ April, 2022

ROYAL UNIVERSITY OF DHAKA
Program: B.Sc. (HON'S) in CSE
Course Code: CSE-223, Couse Name: Theory of Computing
Course Teacher: Md Khirul Islam Badal (01748864767, khirul.badal@royal.edu.bd)

Assignment Topic: Answer All

a) What is push down automata. Write down the formal definition of push down

automata.

b) Write down the definition of Multi Tape Turing Machine, Semi Infinite Tape Turing Machine, Linear bound Turing Machine.
c) What is Deadlock. Find if the following system in fig 1 and fig 2 is in a deadlock state otherwise find a safe sequence.
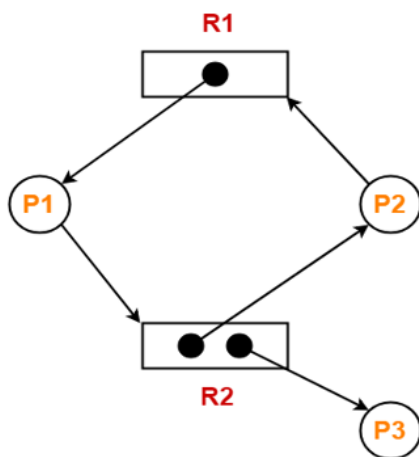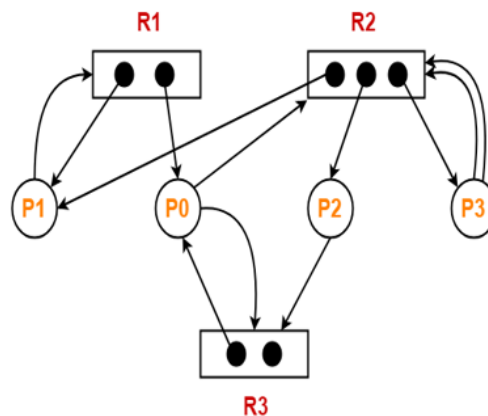

Fig 1   Fig 2

Submission Deadline: 21ᵗʰ April, 2022

ROYAL UNIVERSITY OF DHAKA
Program: B.Sc. (HON'S) in CSE/CSIT
Course Code: CSIT-333, Couse Name: Computer Graphics
Course Teacher: Md Khirul Islam Badal (01748864767, Khirul.badal@royal.edu.bd)
Assignment Topic: Answer All

a) Write down the definition of Anti-Aliasing, Sampling Means, Aliasing Means. Describe it "Do we really need anti-aliasing?"
b) Given a 3D object with coordinate points A (0, 3, 1), B (3, 3, 2), C (3, 0, 0), D (0, 0, 0). Apply the translation with the distance 1 towards X axis, 1 towards Y axis and 2 towards Z axis and obtain the new coordinates of the object.

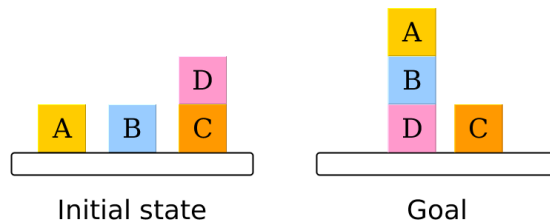**Submission Deadline: 21th April, 2022**

ROYAL UNIVERSITY OF DHAKA
Program: B.Sc. (HON'S) in CSE/CSIT
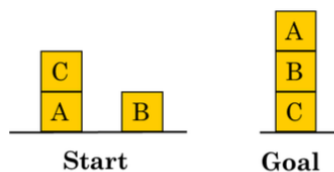**Course Code & Title: CSE 315- Artificial Intelligence (Eve)**
Course Teacher: Hasan Abdullah (01681523656, hasan.abdullah@royal.edu.bd)

Assignment Topic: Answer All
1. You are given two jugs, a 4-gallon one and a 3-gallon one. Neither jug has any measuring markings on it. How can you get exactly 2 gallons of water in the 4-gallon jug? Explain the PRECONDITION, ADD and DELETE of STACK(x,y) and UNSTACK(x,y). Solve the block world problem of the below figure step by step.

2. Explain missionaries and cannibals problems step by step where there are 3 missionaries and 3 cannibals. Briefly explain the rules of Water Jug problem. Explain the Initial state and Goal state of the bellow figure.

Submission deadline: 21st April, 2022.

ROYAL UNIVERSITY OF DHAKA
Program: B.Sc. (HON'S) in CSE/CSIT
Course Code & Title: CSE 321: Computer Peripheral & Interfacing (Eve)
Course Teacher: Hasan Abdullah (01681523656, hasan.abdullah@royal.edu.bd)

Assignment Topic: Answer All
1. Write a short on EAN-13, CODE-39 and CODE-25 barcode. Calculate the check digit of code: 0 3 6 0 0 0 2 9 1 4 5 using UPC-A barcode technique. Classify barcode scanner according to operation. Explain the working principle of DOT matrix printers.

2. What is barcode? Explain the elements of barcode. Calculate the check digit of code: 1 2 3 4 5 6 7 8 9 0 1 2 using EAN-13 barcode technique. Classify barcode scanner according to technology. How does laser printer work?

Submission deadline: 21st April 2022.

ROYAL UNIVERSITY OF DHAKA
Program: B.Sc. (HON'S) in CSE/CSIT
Course Code & Title: CSIT 225: Data Communication (Eve)
Course Teacher: Hasan Abdullah (01681523656, hasan.abdullah@royal.edu.bd)

Assignment Topic: Answer All
1. Explain Local Area Network and Metropolitan Area Network. What is the main difference between persistent HTTP connection and non-persistent HTTP connection? What is DNS and how does it work? Derive the Poisson distribution equation.

2. What are the differences among LAN, MAN and WAN? Explain ARP and RARP conversion. Explain the core protocols of application layer. Show how the address 47:20:1B:2E:08:EE is sent out on line.
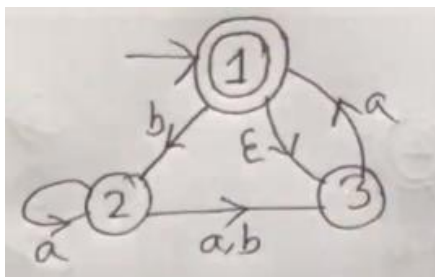
Submission deadline: 21st April 2022.

ROYAL UNIVERSITY OF DHAKA
Program: B.Sc. (HON'S) in CSE/CSIT
Course Code & Title: CSE 329: Compiler Design (Eve)
Course Teacher: Hasan Abdullah (01681523656, hasan.abdullah@royal.edu.bd)

Assignment Topic: Answer All
1. What is pushdown automata? Explain the component of pushdown automata with figure. Differentiate between LL and LR parser. Convert the ε-NFA (epsilon NFA) to DFA step by step using the below figure.

2. Explain the graphical notation of pushdown automata with figure. "Pushdown automata is consist of 6 things". Explain it. What is parsing? Write a short note on Predictive parser.

Submission deadline: 21st April 2022.

ROYAL UNIVERSITY OF DHAKA
Program: B.Sc. (HON'S) in CSE/CSIT
Course Code & Title: CSE 327 - Web Development (Eve)
Course Teacher: Md. Nur-E-Arefin (01675025549, nur.arefin@royal.edu.bd)
Assignment Topic:
Design & Develop an E-commerce website by using HTML, CSS and JavaScript. Use all the techniques that are taught in the class. Your website must have multiple pages and registration system by using form. Your website should be dynamic by using JavaScript. Write proper report about your website by taking screen shots and submit in pdf format.
Submission deadline: 21st April, 2022.

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 Topic:
What is linked list? What are the operations on linked list? What are the types of linked list? Explain the terminology of a tree. What is graph? What are the types of graphs? Explain with diagram.
Submission deadline: 21st April, 2022.

ROYAL UNIVERSITY OF DHAKA
Program: B.Sc. (HON'S) in CSE/CSIT
Course Code & Title: CSE 311 - Database Management System (Day + Evening)
Course Teacher: Md. Nur-E-Arefin (01675025549, nur.arefin@royal.edu.bd)
Assignment Topic:
Explain natural join in SQL. What is outer join? Explain the three forms of outer join with proper example. What is view? How to create and delete views in SQL? Explain authorization. What is E-R diagram? Draw an E-R diagram of a banking enterprise by showing cardinality constraints, primary key, weak entity sets and redundant attributes. What are the common mistakes in E-R diagram? Explain with proper diagrams.
Submission deadline: 21st April, 2022.

ROYAL UNIVERSITY OF DHAKA
Program: B.Sc. (HON'S) in CSE/CSIT
Course Code & Title: CSIT-107: Optical Fiber Communication
Course Teacher: Md. Ealius Azam Sha (01676085809, ealius.sha@royal.edu.bd)

Assignment Topic:
Define the properties of SMF and MMF in optical fiber communication, which one to use in modern high speed fiber communication system? Provide reasons for your answer.
Submission deadline: 21st April, 2022.

ROYAL UNIVERSITY OF DHAKA
Program: B.Sc. (HON'S) in CSE/CSIT
Course Code & Title: EEE-101: Electrical Engineering
Course Teacher: Md. Ealius Azam Sha (01676085809, ealius.sha@royal.edu.bd)

Assignment Topic:
What do you understand by Source transformation? State and explain the Superposition theorem for circuit analysis with proper example.

Submission deadline: 21st April, 2022.

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

Assignment Topic:

Differential between Sum of Products (SOP) and Product of Sums (POS). Describe cache memory with necessary diagrams. Explain assembly language elaborately with figures.
Submission deadline: 21st April, 2022.

ROYAL UNIVERSITY OF DHAKA
Program: B.Sc. (HON'S) in CSE/CSIT
Course Code: CSIT-313, Couse Name: Computer Network
Course Teacher: Shaikh Afnan Birahim (01711027668, afnan.birahim@royal.edu.bd)

Assignment Topic:

Write down the difference between TCP and UDP protocol. Describe the function of presentation layer with diagrams. What is a computer worm and how does it work?
Submission deadline: 21st April, 2022.

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

Assignment Topic:

Explain moment in probability distribution. Briefly describe quartile, decile and complementary event.

Find amount of skewness and comment of the following data:

18   23   98   25   55   70

Submission deadline: 21st April, 2022.

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:
Define research project proposal. Discuss the structure of a research project proposal.

Submission deadline: 21st April, 2022.