NATIONAL INSTITUTE OF TECHNOLOGY, WARANGAL

(An Institution of National Importance)

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

I MCA - II SEMESTER

Minor Test-I , Feb 2018

CS5351 : INTRODUCTION TO DATA STRUCTURES

DATE: 07-02-2018 | *ANSWER THE FOLLOWING QUESTIONS* | **TIME: 70 Minutes**

CLASS: I MCA | **Max Marks: 10M**

1. Explain the process of converting input expression into postfix notation with the help of stack and draw the relevant diagrams followed by essential function definition? (note:- consider the following input expression **a+((b+c)*d-(e/f^g)*h -k))** **3M**
2. Perform postfix evaluation by replacing above operands of mathematical equation with the following numbers i.e., **a=2, b=4,c=2,d=2,e=8,f=2,g=3, h=3, k=1.** Draw the content of stack after each **push()** and **pop()** operations followed by essential function definition. **3M**
3. Write complete source code for the following questions **2M**
   a. Inserting an element at the required position in DLL.
   b. Deleting an element at the required position in DLL.
4. In a circular queue front and rear are set to initial value, three elements are inserted in ascending order. Deleted two elements from the queue and four elements are inserted in descending order. Write a function definition to display the elements of circular queue from rear to front after all these operations. (Array size is **five**. Developer can take any elements in the given Ascending/Descending order and display the sample output for better understanding) **2M**

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DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

MID SEMESTER EXAMINATIONS, February 2018

I MCA II Semester

CS5352 FUNDAMENTALS OF WEB PROGRAMMING

Date: 21-02-2018 Time: 10.00 AM – 12.00 NOON Max. Marks: 30

N.B.: Answer ALL questions

Answers to all parts of each question should be at one place.

		Max. Marks
1a)	Design the drilldown and flat navigation styles with an example code.	2.5
b)	Describe various components of the Internet Architecture with a neat diagram.	2.5
2a)	Write an HTML document that shows the results of a flowers and colours survey. The document should contain a form with radio buttons that allows users to vote for their favourite flower and colour. One of the flowers and colours should be selected as a default. The document should also contain a table showing various flowers, colours and the corresponding percentage of votes for each flower and colour. (Each row should be displayed in the flower and colour to which it is referring.) Use attributes to format width, border and cell spacing for the table.	4
b)	Create an HTML document that gathers information as part of an online shopping system. This page will request shipping and billing name and address, credit card information, and contact information. It should provide a menu from which the type of credit card (from a list of approximately four options) can be selected; the default selection should be "Select a Credit Card". There should also be fields for entering the card number and expiration date. Furthermore there should be checkbox, initially checked, that is labelled "please keep me informed about future product offerings." Finally provide submit and clear buttons. All form controls should have appropriate name attributes. Use the GET method for form submission and specify the empty string for the action.	5
3a)	A parking garage charges a $5.00 minimum fee to park for up to three hours. The garage charges an additional $0.50 per hour for each hour *or* part thereof in excess of three hours. The maximum charge for any given 24-hour period is $10.00. Assume that no car parks for longer than 24 hours at a time. Write a script that calculates and displays the parking charges for each customer who parked a car in this garage yesterday. You should input from the user the hours parked for each customer. The script should display the charge for the current customer and should calculate and display the running total of yesterday's receipts. The program should use the function **calculate_charges()** to determine the charge for each customer.	5
b)	Write a JavaScript function (i) To change the contents of one frame from another frame. (ii) To adjust the size of one or more frames in a frameset, including resizing a frame to zero width or height to hide a frame.	4
4a)	Give a style sheet rule (i) For the body element of a document that will cause a background image to be repeated across the vertical centre of the browser client area. The image should remain in the centre of the window even if the window is scrolled. (ii) To place a nice "frame" around *img* elements. The "frame" should be brown and the inside edges of the frame should touch the outside edges of the image. There should be 10-px distance between adjacent images (either horizontally or vertically).	4
b)	Write a CSS rule that places a background image halfway down the page, tilling horizontally. The image should remain in place when the user scrolls up or down.	3

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
MID EXAMINATIONS, February,2018
I MCA II- Semester
CS353-OBJECT-ORIENTED PROGRAMMING

Date: 22-02-2018 **Time: 2 hours** **Max. Marks: 30**

N.B.: Answer ALL questions

Answers to all parts of each question should be at one place

1.	Consider an example of a Library System in which a reader will be borrowing a book from a library. In such a case, the Reader will usually interact with a Librarian, who will carry out the transaction. Once the due date is over, the book needs to be returned. By using this scenario, answer the following: a) Define the classes, objects and the relationships between them. b) Also define appropriate methods for each object defined in above system. c) Draw the interaction and class diagram for the components	(2+2+2)
2.	Bob wants to prepare for tommorow's exam . He knows the distribution of marks for the subject along with time to learn the concepts. You are given remaining time for the exam along with marks for each topic and passing marks for the subject. Find the max marks Bob can attain by studying max no of topics in max no hours not exceeding (p)	6
3.	Gotham has been attacked by Joker . Bruce Wayne has deployed automatic machine gun at each tower of Gotham. All the towers in Gotham are in straight line. You are given no of towers 'n' followed by height of 'n' towers. For every tower(p), find the height of the closest tower (towards the right), greater than the height of tower(p). Now , Print sum of all such heights (mod 1000000001). Note : If for a tower(k) , no such tower exists then take its height as 0.	6
4.	Write a program to enter phone numbers in your contacts of your phone. Before entering the number, check if the number is valid if it satisfies following criteria. Mobile Number validation criteria: ▪ The first digit should contain number between 7 to 9. ▪ The rest 9 digit can contain any number between 0 to 9. ▪ The mobile number can have 11 digits also by including 0 at the starting. ▪ The mobile number can be of 12 digits also by including 91 at the starting Use the concept of exception handling to handle the exceptions.	6
5.	a. Create a class named Student. A Student has fields for an ID number, number of credit hours earned, and number of points earned. (For example, many schools compute grade point averages based on a scale of 4, so a three-credit-hour class in which a student earns an A is worth 12 points.) Include methods to assign values to all fields. A Student also has a field for grade point average. Include a method to compute the grade point average field by dividing points by credit hours earned. Write methods to display the values in each Student field. b. Write a class named ShowStudent that instantiates a Student object from the class you created and assign values to its fields. Compute the Student grade point average, and then display all the values associated with the Student. c. Create a constructor for the Student class you created. The constructor should initialize each Student's ID number to 9999, his or her points earned to 12, and credit hours to 3 (resulting in a grade point average of 4.0). Write a program that demonstrates that the constructor works by instantiating an object and displaying the initial values.	(2+2+2)

NATIONAL INSTITUTE OF TECHNOLOGY, WARANGAL

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DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
MID SEMESTER EXAMINATION, FEBRUARY 2018
I MCA -- II SEMESTER

CS5354 : UNIX TOOLS PROGRAMMING

DATE: 23-02-2018 | ***ANSWER ALL QUESTIONS*** | **Duration : 2 Hours**
Time: 10:00 AM – 12:00 PM | **Max Marks: 30M**

1. a) Assuming that a file's current permissions are rwxrw-r--, change them to i) rw-r--r-- ii) rwxrwxrwx iii) --------- , using relative and absolute methods of assigning permissions? **3**

   b) Explain with reference to the dot and *, what the following commands do: i) chmod - R 755 . ii. chmod - R a + x * **2**

2. a) Write a command to display the frequency of each word in the given file? Explain with an example? **2**

   b) Write a command to count empty lines in given files, Explain with an example? **2**

3. a) What happens when you run cat foo? **2**

   b) What changes takes place in the inode and directory when a file is linked and later removed? **2**

   c) Define dangling symbolic link? **1**

4. a) Use 'find' to locate from your home directory tree all i) Directories having the permissions 777 ii) Files named a.out and remove them interactively iii) Remove all ordinary files unaccessed for more than one year **3**

   b) What are the file descriptors? How redirection makes use of file descriptors? **2**

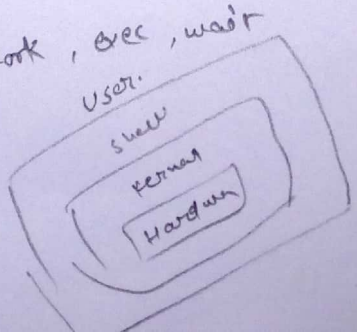
5. a) Write a command to print lines before and after a match of given word in a specific file and explain with an example? **2**

   b) Write a command to show all processes hierarchy in a tree form and explain with an example? **2**

   c) How to send a foreground process into background in Unix and also show how to list such processes. Explain with an example? **2**

6. a) Explain the mechanism of process creation? **2**

   b) Describe briefly the UNIX architecture? **3**



NATIONAL INSTITUTE OF TECHNOLOGY, WARANGAL

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DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

I MINOR EXAMINATION, Feb 2018

I MCA I Semester

CS5354 Unix Tools Programming

ANSWER ALL QUESTIONS

Max. Marks: 10
Time: 30 mins

1. ls | wc – l, what do you think the output represent? (1m)
2. How to delete non empty directory without using rmdir? (1m)
3. Write command to change system date to 5 Feb 2018. (1m)
4. Convert decimal number 255 to octal & hexadecimal using (i) bc (ii) printf. Which one will you use to display number in binary? (2m)
5. You have two list foo1 and foo2, containing names of users. How to you create a third list of those users (i) present in foo2 and who are absent in foo1 (ii) present in foo1 and who are absent in foo2. (2m)
6. Explain the difference between the commands cd ~charlie and cd ~/charlie. Is it possible for both the commands to work? (1m)
7. What do Uni programming, Multi programming, Multi user, Multitasking mean? (2m)

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DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
MID SEMESTER EXAMINATION, FEBRUARY 2018
I MCA - II SEMESTER

CS5351 : INTRODUCTION TO DATA STRUCTURES

DATE: 20-02-2018
Time: 10:00 AM – 12:00 Noon

ANSWER THE FOLLOWING QUESTIONS

TIME: 2 Hours
Max Marks: 30M

1 a) Define big **O, θ, Ω** notation with suitable diagrams? Explain the computational cost of an optimized function definition for calculating a prime number? **4 + 3**

b) Discuss an array operation to insert an element and delete an element at any position with the required pseudo code for each function definition?

2 a) Implement D-queue using two stacks with relevant diagrams for insertions and deletions? Write Pseudo code for all operations in D-queue, D-queue can store any type of data (int, float, char). **4 + 4**

b) What are applications of stack? Implement stack using two queues with essential pseudo code for **push()** and **pop()** operations.

3 a) Explain architecture of SLL? Implement polynomial addition using SLL with required pseudo code in function definition? **3 + 3**

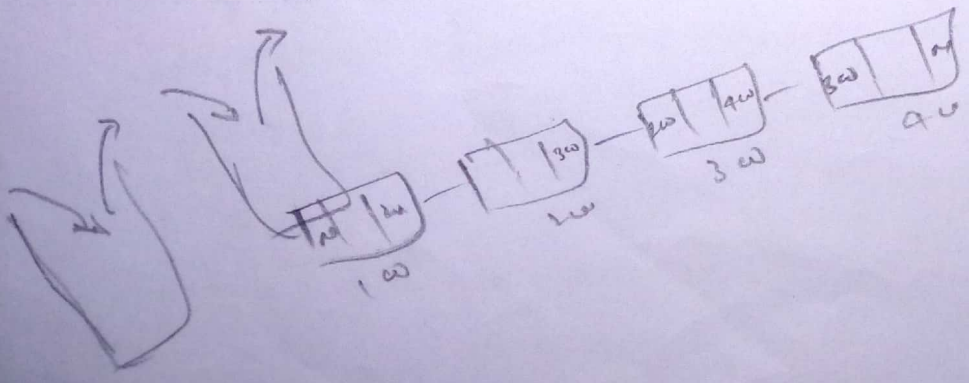
b) In a given SLL, segregate the SLL into sorted order of odd numbers followed by even numbers? (for instance input SLL: **3 4 9 6 8 5 1** , output SLL: **1 3 5 9 4 6 8**)

4 a) Explain indetail about circular DLL architecture? **1 + 3**

b) Write the pseudo code for inserting an element after a ~~small~~ smallest element in DLL and deleting an element at the end in DLL.

5 a) Explain the applications of BST? Construct BST for the following elements **10, 63,5,77, 34, 76, 85, 94, 100, 99, 1**. Travel inorder, preorder and post order on the constructed BST? **2 + 3**

b) Write the pseudo code for insertion (recursively) and search (iteratively) of an element in the BST?



School of Management
National Institute of Technology, Warangal

MCA II SEM

ACCONNTING AND FINANCIAL MANAGEMENT.

Date: 19/02/18 FN | Mid-Examination | Time 2. Hrs | MM 30 marks.

Time Technoplast | Previous Years »

Standalone Balance Sheet ---------- in Rs. Cr. ----------

	Mar '17	Mar '16	Mar '15	Mar '14	Mar '13
Sources Of Funds					
Total Share Capital	22.61	21.01	21.01	21.01	21.01
Equity Share Capital	22.61	21.01	21.01	21.01	21.01
Reserves	1,133.44	889.43	803.95	748.1	680.27
Networth	**1,156.05**	**910.44**	**824.96**	**769.11**	**701.28**
Secured Loans	504.68	422.21	390.35	393.13	342.23
Unsecured Loans	0	29.89	25.19	36.23	51.92
Total Debt	**504.68**	**452.1**	**415.54**	**429.36**	**394.15**
Total Liabilities	**1,660.73**	**1,362.54**	**1,240.50**	**1,198.47**	**1,095.43**

	Mar '17	Mar '16	Mar '15	Mar '14	Mar '13
Gross Block	1,194.48	1,028.90	927.55	856.77	718.53
Less: Accum. Depreciation	440.65	374.62	320.77	276.65	235.06
Net Block	**753.83**	**654.28**	**606.78**	**580.12**	**483.47**
Capital Work in Progress	59.58	0	29.08	40.35	105.86
Investments	**150.99**	**135.33**	**149.9**	**149.9**	**144.57**
Inventories	345.78	285.84	258.32	233.92	210.96
Sundry Debtors	418.48	347.46	285.05	267.06	224.9

Cash and Bank Balance	19.57	23.69	25.42	31.29	25.7
Total Current Assets	783.83	656.99	568.79	532.27	461.56
Loans and Advances	271.72	240.7	206.32	203.56	190.62
Total CA, Loans & Advances	1,055.55	897.69	775.11	735.83	652.18
Current Liabilities	347.33	321.45	277.99	270.32	247.35
Provisions	11.9	51.62	42.34	37.42	43.29
Total CL & Provisions	359.23	373.07	320.33	307.74	290.64
Net Current Assets	**696.32**	**524.62**	**454.78**	**428.09**	**361.54**
Total Assets	**1,660.72**	**1,314.23**	**1,240.54**	**1,198.46**	**1,095.44**
Income					
Sales Turnover	1,776.60	1,559.45	1,486.72	1,218.03	1,066.56
Excise Duty	180.46	152.17	143.63	0	0
Net Sales	1,596.14	1,407.28	1,343.09	1,218.03	1,066.56
Other Income	1.57	35.5	1.24	23.48	4.3
Stock Adjustments	12.21	11.71	10.22	12.31	15.29
Total Income	**1,609.92**	**1,454.49**	**1,354.55**	**1,253.82**	**1,086.15**
Expenditure					
(D) Raw Materials	1,162.72	1,000.17	950.65	859.13	727.54
(D) Power & Fuel Cost	60.73	52.15	49.32	46.64	41.64
(D) Employee Cost	63.33	52.41	50.01	45.36	39.15
(D) Other Manufacturing Expenses	7.54	5.29	7.83	11.05	6.58
(I) Selling and Admin Expenses	0.74	0.35	0	0	0
(I) Miscellaneous Expenses	65.59	97.09	93.74	84.95	72.93
Total Expenses	1,360.65	1,207.46	1,151.55	1,047.13	887.84

Net sales: 1596.14 − 1294.32 = 0301.82

COGS = 1162.72 + 60.73 + 63.33 + 7.54 = 1294.32

1. calculate various ratios for the above data. 10m

PAT = 1294.32

Sales − Gross O.P + prov − closing.

2. comment on the financial performance of the company 10m

3a) What is difference between income statement and Balance sheet 2m

3b) Arrange them in order: PAT, EBIT, PROFIT BEFORE TAX, RETAINED PROFIT. 2m

4 2 3

E.P. EBIT PBT PAT

3c) What are activity ratios and long term solvency ratio 6m