Roll No.

GAIN MORE KNOWLEDGE
REACH GREATER HEIGHTS

PRESIDENCY UNIVERSITY
BENGALURU

SCHOOL OF ENGINEERING

TEST 1

Sem & AY: Odd Sem. 2019-20 **Date**: 27.09.2019

Course Code: CSE 201 / CSE 221 **Time**: 2:30PM to 3:30PM

Course Name: DATA STRUCTURES / DATA STRUCTURES AND ALGORITHM **Max Marks**: 40

Program & Sem: B.Tech (CSE) & III **Weightage**: 20%

Instructions:

(i) Answer all the questions

Part A [Memory Recall Questions]

Answer all the Questions. Each Question carries four marks. (3x4M=12M)

1. Multiple choice Questions (C.O.NO.1) [Knowledge]

a. Which is not applicable in the context of Data Structure?
i: Storing Data ii: Retrieving Data iii: Cleaning Data iv: Representing Data.

b. Which of the following statement is false with reference to data structure
i: The concepts of Data Structure is applicable in designing hardware components
ii: The concepts of Data Structure is not applicable in designing web site of an organization such as University, Amazon....etc.
iii: The knowledge of Data Structure is applicable in designing timetable in University.
iv: The serving boy in the CCD of Presidency University should know the concept of Data Structure.

c. Abstract Data Type
i : Define logical form of data.
ii: Used to develop user redable software or program.
iii: Hide the physical representation of data.
iv: Create new user defined datatype.

d. Which of the following is not used to create user defined datatype in C programming language?
i: struct ii: union iii: typedef iv: enum.

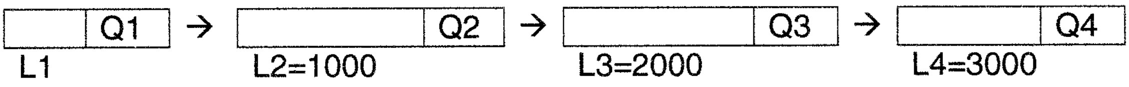
2. What is the output of the following program? (C.O.NO.1) [Knowledge]

```
void main()
{
int *a,*aa,b=50;
int c[5]={15,25,35,45,55};
a=&b;
aa=c;
printf("First=%d\n",*a);
printf("Second=%d\n",*aa);
printf("Third=%d\n",*(aa+1));
printf("Fourth=%d\n",*(c+2));
printf("Fifth=%d\n",*(c+3)+5);
printf("Sixth=%d\n",aa[4]);
printf("Seventh=%d\n",*a+1);
printf("Eighth = %d\n",*aa+1);
}
```

3. The structure of the Location of linked list is given below. (C.O.NO.2) [Knowledge]

```
struct Location
{
int cost;
struct Location * address;
};
struct Location *L1,*L2,*L3,*L4;
```

a: What is Q1, Q2, Q3, and Q4



b: Write C statements to read following value {50,60,70,80} in the cost part of locations L1,L2,L3 and L4 respectively,?

Use the following scenario to answer Questions 4 and 5 in Part B and Question 6 in Part C.

Under 25 Summit 2019 is organized in Presidency University. Series of events are scheduled, {Music, Dance, Design, Fashion}. Students are selling the pass for the event. Participants can purchase the pass for the same.
Following information about the Participants are stored in the pass: { Name, Event type, Money Paid, Pass Number, Event time}. **Example:** Pass of Hari is {Name: Hari, Event Type: 1, Money Paid: 400 PassNumber: Dance0020, Event Time: 10.30 }
A list of participants say plist is maintained by the organizing committee which store the pass details of all the participants.
The number of participants who participate in the summit will vary every year. The organizing committee will decide the number of participants of the particular year. Thus the plist is created dynamically.

```
The main function to call functions is given below.
void main()
{
PASS *ptlist,ps;
int psize,choice;
Name pname;
PassNumber result;
printf("Enter the Size of of the list required\n");
scanf("%d",&psize);
createList(ptlist,psize);
psize=0;
  for(;;)
  {
     printf("Enter the Choice\n");
      printf("1: Book pass 2: Display 3:Search 4: Exit\n");
      scanf("%d",&choice);

      switch(choice)
       {
         case 1: printf("Enter the Customer\n");
                 scanf(" %s",ps.pname);
                 printf("Enter Event Type\n");
                 printf("Music= 1 \t2:Dance \n3:Design\t4:Fashion\n");
                 scanf("%d",&ps.et);
                 printf("Enter the Time\n");
                 scanf("%f",&ps.t);
                 printf("Enter the Money Paid\n");
                 scanf("%d",&ps.mp);
                 psize=BookPass(ptlist,psize,ps);
                 break;
         case 2: display(ptlist,psize);
                 break;
        case 3: printf("Enter the name to search\n");
                scanf("%s",pname);
                SearchParticipant(ptlist,psize,pname);
                 break;
        default : exit(0);
       }
    }
}
```

Name is: Collection of characters with maximum size 25
Event is: Enumerated type with {Music, Dance, Design and Fashion}
Money is: Number
Pass Number: collection of characters with size 10.
Time: is a number which store hour and minute as 10.30 to represent 10 hours and 30 min.

Part B [Thought Provoking Questions]

Answer both the Questions. Each Question carries seven marks. (2Qx7M=14M)

4. Write the ADT to create a data called PASS. (C.O.NO.1) [Comprehension]

5. Complete the following function signature by identifying parameters and return type.

(C.O.NO.1) [Comprehension]

```
Qa createList(Qb,Qc):
        Dynamically Create the list of the specified size.
Qd SearchParticipant(Qe,Qf,Qg)
            Take participant name and display the pass number.
Qh display(Qi,Qj)// Display the details of all the participants.
{
 int i=0;
   while(i!=Psize)
    {
    printf("%d Participant Name=%s\n",i,Ptlist[i].pname);
    printf("%d Event Type =%d\n",i,Ptlist[i].et);
    printf("%d Participant Pass number=%s\n",i,Ptlist[i].pnum);
    printf("%d Event time is %f\n",i,Ptlist[i].t);
    i++;
   }
}
//Take participant as input and insert into the participant list
Qk BookPass(Ql,Qm,Qn) {
 printf("Enter the Pass number\n");
 scanf("%s",&p.pnum);
 printf("%d Pass issued\n",Psize+1);
 Ptlist[Psize]=p;
 Psize=Psize+1;
return(Psize);
}
```

Part C [Problem Solving Questions]

Answer the Question. The Question carries fourteen marks. (1x14M=14M)

6. a. Complete the function “CreateParticipants” [4M]

(C.O.NO.1) [Comprehension]

b. Complete the function “SearchParticipants” which take participant name as input, search for the participants and print the pass number of the participant otherwise print Not Found. [10M]

(C.O.NO.1) [Application]

SCHOOL OF ENGINEERING

TEST –1

Semester: 3rd

Course Code: CSE 201 / CSE 221

Course Name: Data Structure / Data Structure Algorithm

Program & Sem: B.Tech & 3rd Sem

Date: 27/09/2019

Time: 2PM

Max Marks: 40 Marks

Weightage: 20%

Extract of question distribution [outcome wise & level wise]

Q. NO .	C.O. NO	Unit/Module Number/Unit /Module Title	Memory recall type [Marks allotted] Bloom's Levels			Thought provoking type [Marks allotted] Bloom's Levels			Problem Solving type [Marks allotted]			Total Marks
			K			C			A			
1	1	Integration and Basics of C Program	4									4
2	1	Pointers	4									4
3	2	Linked List	4									4
4	1	User Defined Datatype				7						7
5	1	Function Parameter Passing				7						7
6	1	Functions	4						10			14
	Total Marks		16			14			10			40

K =Knowledge Level C = Comprehension Level, A = Application Level
Note: While setting all types of questions the general guideline is that about 60%
Of the questions must be such that even a below average students must be able to attempt, About 20% of the questions must be such that only above average students must be able to attempt and finally 20% of the questions must be such that only the bright students must be able to attempt.

[I here certify that All the questions are set as per the above lines Dr Kiran D C]

Annexure- II: Format of Answer Scheme

SCHOOL OF ENGINEERING

TEST –1

Semester: 3rd

Course Code:

Course Name: Data Structure / Data Structure Algorithm

Program & Sem: B.Tech & 3rd Sem

Date: 27/09/2019

Time: 2PM

Max Marks: 40 Marks

Weightage: 20%

Part A (Q x M = Marks)

Q 1	Solution	Scheme of Marking	Max. Time required for each Question
a b c d	iii: Cleaning Data ii: The concepts of Data Structure is not applicable in designing web site of an organization such as University, Amazon....etc. iv: Create new user defined datatype. iii: typedef	**1 *4=4 M**	**5 Min**

Q 2	Solution	Scheme of Marking	Max. Time required for each Question

	First=50
	Second=15
	Third=25
	Fourth=35
	Fifth=50
	Sixth=55
	Seventh=51
	Eighth = 16
		0.5*8=4M	**5 Min**

Q 3	Solution	Scheme of Marking	Max. Time required for each Question
a	**Q1= 1000** **Q2=2000** **Q3=3000** **Q4=NULL**	**2+2 = 4M**	**5 Min**
b	**L1→cost=50** **L2->cost=60** **L3→cost=70** **L4->cost=80**		

Part B (2 x 7 = ~~7~~ 14 Marks)

Q 4	Solution	Scheme of Marking	Max. Time required for each Question

	`typedef char Name[20];`
	`enum event {music= 1,Dance,Fashion,Design};`
	`typedef char PassNumber[8];`
	`typedef int MoneyPaid;`
	`typedef float Time;`
	`struct pass`
	`{`
	`Name pname;`
	`enum event et;`
		0.5+1+0.5+0.5+0.5+3+1	10Min

	PassNumber pnum;
	Time t;
	MoneyPaid mp;
	};
	typedef struct pass PASS;		

Q5	Q1: void Q2: PASS *pt Q3: int psize Q4: void Q5: PASS Ptlist[] Q6: int Psize Q7: Name Pname Q8: void Q9: PASS Ptlist[] Q10: int Psize Q11: int Q12: PASS Ptlist[] Q13: int Psize Q14: PASS p	0.5*14=7 M	10 Min

Part C

1 x 14 = 14 marks

(Q x M = Marks)

Q 6	**Solution**	**Scheme of Marking**	**Max. Time required for each Question**

	void createList(PASS *pt,int psize)
	{
	 pt=(PASS *)malloc(psize*sizeof(struct pass));
	}
	
	void SearchParticipant(PASS Ptlist[],int Psize,Name Pname)
	{
	int i;
	  for(i=0;i<Psize;i++)
	   {
	    if(strcmp(Pname,Ptlist[i].pname)==0)
	     {
	      printf("The pass number is %s\n",Ptlist[i].pnum);
	      return;
	     }
	   }
	printf("The participant is not found\n");
	}
		1*4=4 M
		1*10=10M
			5 Min+ 20 Min=25Min

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PRESIDENCY UNIVERSITY
BENGALURU

SCHOOL OF ENGINEERING

TEST – 2

Sem & AY: Odd Sem 2019-20
Course Code: CSE 201/CSE 221
Course Name: DATA STRUCTURES/DATA STRUCTURES AND ALGORITHMS
Program & Sem: B.Tech (CSE/CCE/COM/ISE/IST) & III

Date: 16.11.2019
Time: 2:30 PM to 3:30 PM
Max Marks: 40
Weightage: 20%

Instructions:

(i) Answer All the Questions.

Part A [Memory Recall Questions]

Answer all the Questions. Each sub Question carries one mark. (10Qx1M=10M)

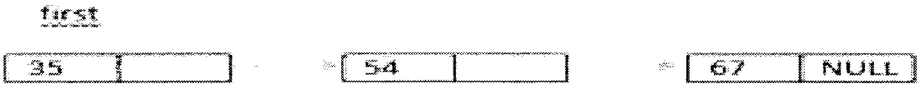
1. (C.O:1&2) [Knowledge]

a). Declare two variables S1 and S2 to store marks of two evaluation components of the type given in the structure.

```
struct marks
{
   int dstheory;
   int dslab;
};
```

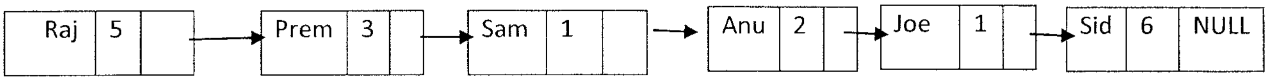
b). the working mechanism of a printer follows ________________data structure

c). Consider the linked list given below, if first=first->address what is first->item=?

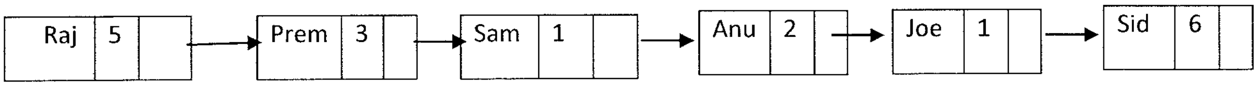


d). Consider the queue given below where priority is given to every Location. Write the sequence of names which get deleted from the queue.

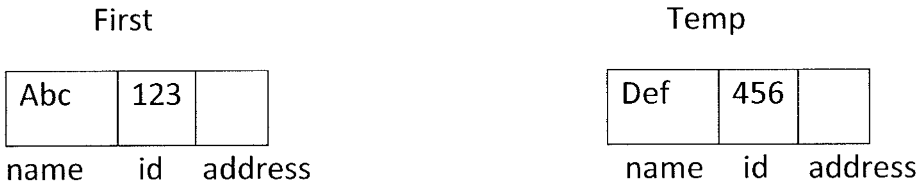
Note: Lower the number higher the priority.



e). Consider the queue given where priority is given for every node. However, write the sequence of names which get deleted from the queue if First In First Out (FIFO) order is followed.



f). Consider the linked list with one location (First). If a new location, say Temp is created as shown below, Write C statements to insert Temp after First.



g).Write the C statements to check whether the Circular queue is full

h).Mini statement of an ATM is an example of _______________ data structure

i).What will be the final content of the stack when checking the following Parenthesis for balanced/unbalanced

“((( )))”

j).What will be the final content of the stack when checking the following Parenthesis for balanced/unbalanced

“((( ))))”

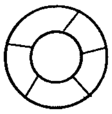
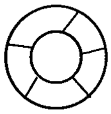
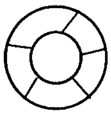
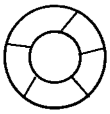
Part B [Thought Provoking Questions]

Answer both the Questions. **(2Q=16M)**

2. Given a Circular queue of size 5 and the following operation (insert and delete) are performed in the order given below. (C.O.NO.2) [Comprehension]

Insert 10, insert 20, insert 30, insert 40, delete 10, delete 20, insert 50, insert 60, insert 30, insert 15,delete 30

If circular queue is implemented as array, show all the queue operations by modifying front and rear index appropriately. Display the message Queue Empty or Queue Full if required.

 **Step1** Front=? Rear=?	 **Step2** Front=? Rear=?	 **Step3** Front=? Rear=?	::::::::::::::::	:::::::::::::	 **Step?** Front=? Rear=?

Consider the following scenario to answer Q3 and Q4.

Transport department of Presidency University is planning to issue bus passes to the students who have availed the university transport facility. To maintain fair and transparent service, the department uses a list which store the student detail in the order of registration.

Help the Transport department to build the student list which satisfy the above requirement. Following format is used to maintain the student details. **[6 M]**

Registration No	Name	Route Number	Cost	Pick up Time

3. (C.O.NO.2) [Comprehension]

i. Create an ADT, if student data is stored in following format **[2 M]**

01	Sachin	1	25000	07.00
02	Priya	2	18000	07.30
03	Azhar	1	23000	07.15

ii. Write a function to count all the students who have opted for route 1. Assuming the list of students are stored in an array **struct Student s_list[10];**
int countstudents(struct student s_list[], int size) **[4 M]**

iii. Write a function to count all the students who have opted for route 1. Assuming the list of students are stored in a linked list.
int countstudents(Location first) **[4 M]**

Part C [Problem Solving Questions]

Answer the Question. The Question carry fourteen marks. **(1Q=14M)**

4. (C.O.NO.2) [Application]

i. Identify the suitable data structure to help the transport department. Justify your selection of data structure. Give the combination of insert and delete operation if it is implemented as linked list. **[2 M]**

ii. Write the insert function as suggested in (**Q4.i**) with following function signature
Location insert(Location first, RegNo sn, route rt, cost cst, Time ti) **[6 M]**

iii. Write a display function to display all the student details. **[6 M]**
void display(Location first)

SCHOOL OF ENGINEERING

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Semester: 3

Course Code: CSE 201

Course Name:

Date: 16/11/2019

Time: 60 Mins

Max Marks: 40

Weightage: 20%

Extract of question distribution [outcome wise & level wise]

Q NO.	C.O.NO	Unit/Module Number/Unit /Module Title	Memory recall type [Marks allotted] Bloom's Levels			Thought provoking type [Marks allotted] Bloom's Levels			Problem Solving type [Marks allotted]			Total Marks
			K			C			A			
1	2	2/Linear data structures.	10									10
2	2	2/Linear data structures				6						6
3	2	2/Linear data structures				10						10
4	2	2/Linear data structures							14			14
	Total Marks	40	10			16			14			

K =Knowledge Level C = Comprehension Level, A = Application Level

Note: While setting all types of questions the general guideline is that about 60%

Of the questions must be such that even a below average students must be able to attempt, About 20% of the questions must be such that only above average students must be able to attempt and finally 20% of the questions must be such that only the bright students must be able to attempt.

Annexure- II: Format of Answer Scheme

GAIN MORE KNOWLEDGE
REACH GREATER HEIGHTS

SCHOOL OF ENGINEERING

SOLUTION

Date: 27/09/2019

Semester: 3

Time: 60 Mins

Course Code: CSE 201

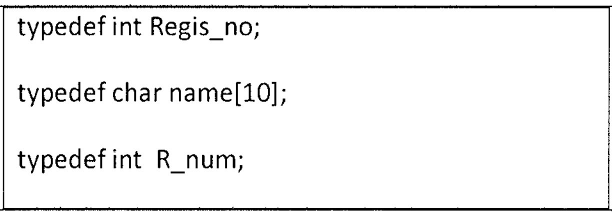
Max Marks:40

Course Name:

Weightage: 20%

Part A (3Q x 4M = Marks)

Q No	Solution	Scheme of Marking	Max. Time required for ea Question
1	a. Struct marks s1,s2 b. Queue c. 54 d. Sam, Joe, Anu, Prem, Raj, Sid e. Raj, Prem, Sam, Anu, Joe, Sid f. First->address=temp g. If(rear==size-1 && front==0) || If(rear==front-1) h. Stack i. Null j. Null	1 M * 10	10 Mins
2	Step1: f=-1, r=-1 Step2: f=0, r=0 Step3: f=0, r=1 Step4: f=0, r=2 Step5: f=0, r=3 Step6: f=1, r=3 Step7: f=2, r=3 Step8: f=2, r=4 Step9: f=2, r=0 Step10: f=2, r=1 Step11: FULL Step12: f=3, r=1	0.5 M * 12	12 Mins

3.i	
	typedef int Regis_no;
	typedef char name[10];
	typedef int R_num;
		Typedef – 1 Mark
		Structure- 1 Mark
			5 Mins

	typedef int cost;
	typedef float pick_time;
	struct student
	{
	Regis_no sre_no;
	Name s_name;
	R_num sr_num;
	Cost s_cost;
	Pick_time s_time
	};		

3.ii	**Int countstudents(struct student s_list, int size)
	{
	Int i, count=0;
	For(i=0;i<size;i++)
	{
	If(s_list[i].sr_num==1)
	Count++
	}
	}**
		4 Marks	**5 Mins**

3.iii	**Int countstudents(LOC first)
	{
	Int count=0;
	LOC cur;
	For(cur=first;first!=NULL;first=first->address)
	{
	If(cur->sr_num==1)
	Count++
	}
	}**
		4 Marks	**5 Mins**

Part C

(1Q x 14M =14 Marks)

Q No	Solution	Scheme of Marking	Max. Time required for each Question
4.i	Array/Linked list	Data structure – 1 Mark Justification -1 Mark	5 Mins

4.ii	Location insert(Location first, RegNo sn, route rt, cost cst, Time ti)
	{
	Function implementation
	}
		Signature – 2 Marks
		Body=3 marks
		Return value-1 mark
			10 Mins

4.iii	void display(Location first)
	{
	Cur=first;
	While(sur!=NULL)
	{
	Printf(“ print details\)
	}
	}
		Loop = 2 Marks
		Return type=1 Mark
		Print details=3 marks
			8 Mins

Roll No												

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SCHOOL OF ENGINEERING

END TERM FINAL EXAMINATION

Semester: Odd Semester: 2019 - 20
Course Code: CSE 201
Course Name: DATA STRUCTURES
Program & Sem: B.Tech (CSE) & III

Date: 23 December 2019
Time: 1:00 PM to 4:00 PM
Max Marks: 80
Weightage: 40%

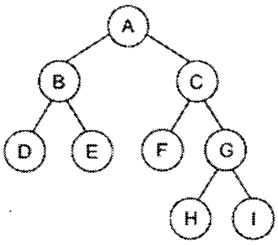
Instruction: Answer all the Questions.

Part A [Memory Recall Questions]

Answer all the Questions. **(7Q=30M)**

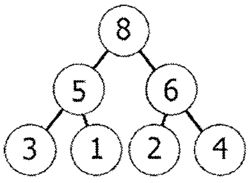
1. Consider the tree given below and answer the following

(a) Name the leaf nodes
(b) Find the height of the tree
(c) Find the level of node E
(d) Identify parent nodes



[4M] (C.O.No.3) [Knowledge]

2. Insert a new node with value 10 and heapify the tree (depict all the steps)



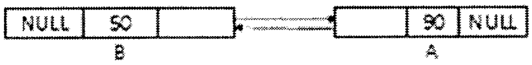
[4M] (C.O.No.4) [Knowledge]

3. For the given table of data, define an ADT and show how to read values

Make	Engine capacity	color	Chaise. NO
Honda	1118.67	R	KER345TG002

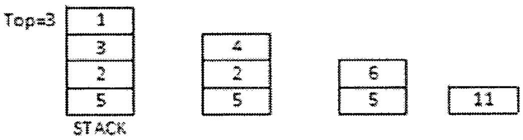
[4M] (C.O.No.1) [Knowledge]

4. Write the C statements to declare, allocate memory and initialize values for the given DLL



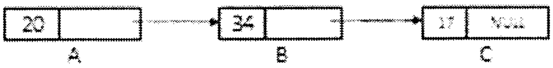
[4M] (C.O.No.4) [Knowledge]

5. Write the sequence of operations required to obtain the final output



[4M] (C.O.No.2) [Knowledge]

6. Write the necessary C statements required to perform the following operations on singly linked list in sequence



a. create a new node D with value 50

b. insert new node D between B and C

c. delete node C [6M] (C.O.No.2) [Knowledge]

7. a. Suggest the two methods through which we can overcome the drawback of array implementation of queue data structure

b. Write the conditions to check whether circular queue is full

c. ______________ is a generalized version of Queue data structure that allows insert and delete at both ends. [4M] (C.O.No.1&2) [Knowledge]

Part B [Thought Provoking Questions]

Answer all the Questions. Each Question carries 10 marks. (3Qx10M=30M)

8. Construct a BST for the given set of values and show the output of in-order, pre-order and post-order traversal

50, 700, 76, 85, 92, 73, 101. (C.O.No.3) [Comprehension]

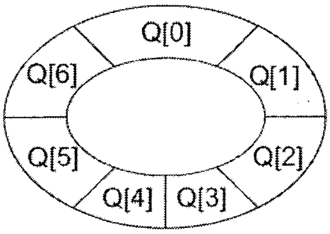
9. Demonstrate how the given number are stored in a hash table of size 7, with collision resolution techniques (chaining and linear probing)

50, 700, 76, 85, 92, 73, 101. (C.O.No.4) [Comprehension]

10. Given a Circular Queue of size 7, perform the following operations in the given order

delete(), Insert(19), insert(49), insert(17), insert(14), delete(), insert(36), insert(45), insert(21), insert(99), insert(72), delete()

Depict all the steps with proper values of Front and Rear along with queue full / empty cases



Initially
Front= Rear= -1

(C.O.No.2) [Knowledge]

Part C [Problem Solving Questions]

Answer the Question. The Question carries 20 marks. (1Qx20M=20M)

11. Mr. Syed is in-charge for transport division at Presidency University. To maintain fair and transparent service mechanism, he want to store the following data in a linked list.

student Name	ID	Semester	branch	Boarding point	Boarding Time
Hari	20181CSE001	3	CSE	Hebbal	08.20

i. Create an ADT to store the above information

ii. write a function to insert student info into the list

struct node * insertfront(struct node *head)

iii. Write a function to count the number of students who are in first sem

int count (struct student *head, int sem)

iv. Write a function to display the seat allotted (***assume structure is having one more additional filed for indicating seat number***) to individual students along with their ID and name from a particular boarding point

void display(struct node *head) (C.O.No.2) [Application]

GAIN MORE KNOWLEDGE
REACH GREATER HEIGHTS

SCHOOL OF ENGINEERING

END TERM FINAL EXAMINATION

Extract of question distribution [outcome wise & level wise]

Q.NO .	C.O.NO (% age of CO)	Unit/Module Number/Unit /Module Title	Memory recall type [Marks allotted] Bloom's Levels	Thought provoking type [Marks allotted] Bloom's Levels	Problem Solving type [Marks allotted]	Total Marks
			K	C	A	
1	3	3	4			4
2	4	4	4			4
3	1	1	4			4
4	2	2	4			4
5	2	2	4			4
6	2	2	6			6
7	1,2	1,2	4			4
8	3	3		10		10
9	4	4		10		10
10	2	2	10			10
11	2	2			20	20
	Total Marks		40	20	20	80

K =Knowledge Level   C = Comprehension Level, A = Application Level

Note: While setting all types of questions the general guideline is that about 60%

Of the questions must be such that even a below average students must be able to attempt, About 20% of the questions must be such that only above average students must be able to attempt and finally 20% of the questions must be such that only the bright students must be able to attempt.

I hereby certify that all the questions are set as per the above guidelines.

Faculty Signature:

Reviewer Commend:

Format of Answer Scheme

GAIN MORE KNOWLEDGE
REACH GREATER HEIGHTS

SCHOOL OF ENGINEERING

SOLUTION

Semester: Odd Sem. 2019-20

Course Code: CSE 201

Course Name: DATA STRUCTURES

Program & Sem: B.Tech,& III

Date: 23 Dec 2019

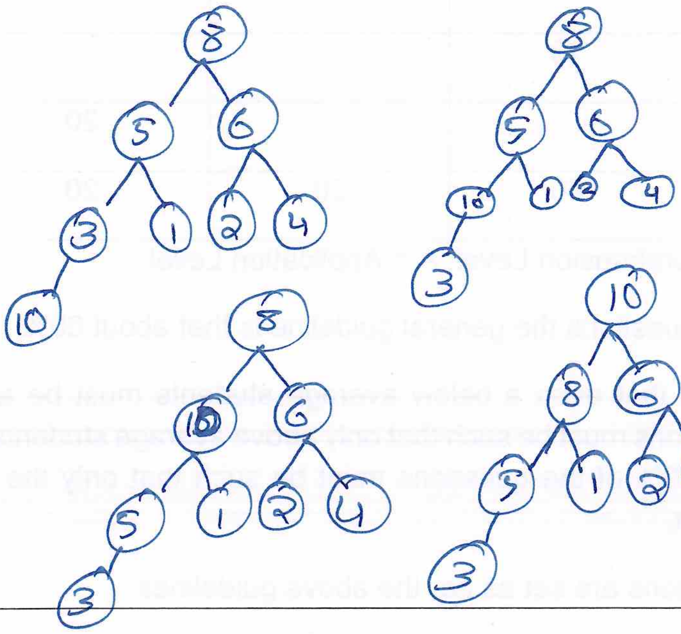
Time: 1:00 PM to 4:00 PM

Max Marks: 80

Weightage: 40%

Part A

(7Q x 0M = 30Marks)

Q No	Solution	Scheme of Marking	Max. Time required for each Question
1	a. D,E,F,H,I b. 3 c. 2 d. A,B,C,G	1 mark each	**7min**
2	 8 5 6 3 1 2 4 10 8 5 6 10 1 2 4 3 8 10 6 5 1 2 4 3 10 8 6 5 1 2 4 3	Insertion ->1 mark Each step 1 mark	**7min**

3	struct car
	{
	Char make[10];
	Float capacity;
	Char c;
	Char chaise[10];
	};
	
	struct car C;
	
	scanf("%s",s.make);
	scanf("%f",&s.capacity);
	scanf("%c",&s.c);
	scanf("%s",s.chaise);
		ADT-2
		Reading 2
			7 min

4	struct node
	{
	struct node *L;
	struct node *R;
	int data;
	};
	
	struct node *B= (struct node*) malloc(sizeof(struct node)) ;
	struct node *A= (struct node*) malloc(sizeof(struct node)) ;
	
	B->L=NULL;
	B->data=50;
	B->R=A;
	A->L=B;
	A->data=90;
	A->R=NULL;
		Structure 1 mark
		
		Allocation-1mark
		
		Initialization 2 mark
			7 min

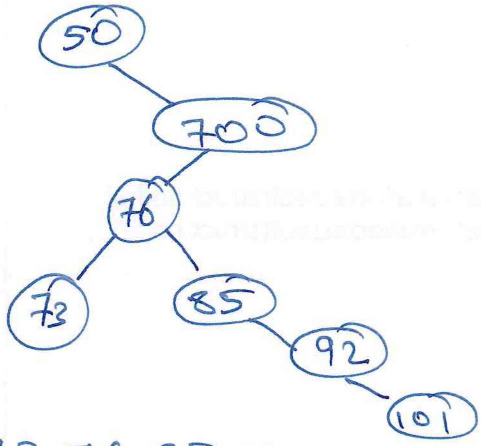
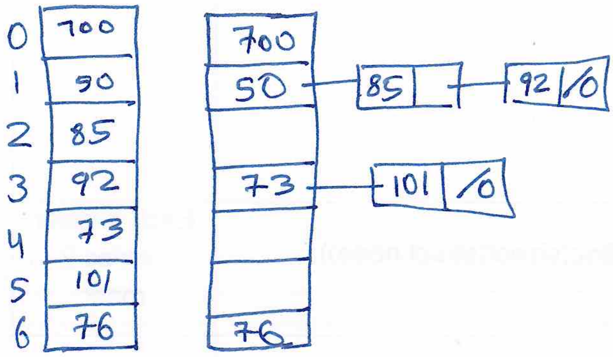
5	int x= stack[Top];
	Top--;
	int y=stack[Top]
	Stack[Top]=x+y;
	
	int x= stack[Top];
	Top--;
	int y=stack[Top]
	Stack[Top]=x+y;
	
	int x= stack[Top];
	Top--;
	int y=stack[Top]
	Stack[Top]=x+y;
		4 mark	**7 min**

6	a.
	struct node *D= (struct node*)malloc(sizeof(struct node));
	D->data=50;
	D->next=NULL;
	
	b.
	B->next=D;
	D->next=C;
		Each answer carries 2 mark	**7 min**

	c.
	D->next=NULL;
	free(C);		

7	a. shift all elements one position left and circular queue b. ((rear==SIZE-1&&front==0) || ((rear==front-1) c. Double ended Queue	a. 2mark b.1 mark c.1 mark	7 min

Part B (3Q x10M = 10 Marks)

Q No	Solution	Scheme of Marking	Max. Time required for each Question
8	 In- 50, 73, 76, 85, 92, 101, 700 Pre- 50, 700, 76, 73, 85, 92, 101 Post- 73, 101, 92, 85, 76, 700, 50	construction 4 mark Each traversal 2 mark	30 min
9	 0 700 1 50 2 85 3 92 4 73 5 101 6 76 700 50 85 92 73 101 76	Chaining -5 mark Linear probing-5 mark	30min

10	Delete() – F=-1, R=-1 Empty Insert (19) – F=0, R=0 Insert (49) – F=0, R=1 Insert (17) – F=0, R=2 Insert (14) – F=0, R=3 delete () – F=1, R=3 Insert (26) – F=1, R=4 Insert (45) – F=1, R=5 Insert (21) – F=1, R=6 Insert (99) – F=1, R=0 Insert (72) – F=1, R=0 FULL Delete () – F=2, R=0	1 mark for each step	30 min

Part C (1Q x 20M =20Marks)

Q No	Solution	Scheme of Marking	Max. Time required for each Question

11	i.
	struct student
	{
	char name[15];
	char ID[6];
	int semester;
	char branch[4];
	char b_point[20];
	float time;
		i.3 mark
		ii.7 mark
		iii. 5 mark
		iv. 5 mark
			40 min

```
struct student *address
};

ii.
struct node * insertfront( struct node *head )
{
struct node * newnode=create_location();
printf( enter the following details : name, ID, sem,
branch, B_point,time)

scanf(“%s”,newnode-> name);
  scanf(“%s”, newnode->ID);
   scanf(“%d”,&newnode-> semester);
   scanff(“%s”,newnode->branch);
   scanf(“%s”,newnode-> b_point);
   scanf(“%f”,&newnode->time);
newnode->address=head;
head=newnode;
   return(head);
}
iii.
int count (struct student *head, int sem)
{
int count=0;
struct student *temp=head;
while(temp!=NULL)
{
If(temp->semester==sem)
count++;
temp=temp->addesss
}
return(count)
}

iv.

void display( struct node *head )
{
struct student *temp=head; char place[20];
scanf(“%s”, place);
while(temp!=NULL)
{
If(strcmp(temp->b_point,place)==0)
        Printf(“Id=%s   Name=%s   seat=%d”,   temp->ID,temp->name,temp->seat);
```

	temp=temp->addesss
	}
	}		