CS/M.TECH (CSE)/SEM-2/PGCS-203/09 ADVANCED DBMS (SEMESTER - 2)

1.	Signature of Invigilator											o ch		3	, 80 ;		
2.	Signature of the Officer-in-Charge	No.															
	Roll No. of the Candidate																
	CS/M.TECH ENGINEERING & MAN ADVANCEI	AGE	MEN	T E	CX.	M	INA	TIC	ONS	, Jt	J LY	2	2009	9			
Tin	ne : 3 Hours]												[F	`ull	Ma	rks	: 70

INSTRUCTIONS TO THE CANDIDATES:

- 1. **This Booklet is a Question-cum-Answer Booklet.** The Booklet consists of **32 pages**. **First page** of the Booklet shows Instructions to the Candidates. The **questions** of this concerned subject commence from **Page No. 3**.
- 2. You have to answer the questions in the space provided marked 'Answer Sheet'. Write on both sides of the paper.
- 3. Fill in your Roll No. in the box provided as in your Admit Card before answering the questions.
- 4. Read the instructions given inside carefully before answering.
- 5. You should not forget to write the corresponding question numbers while answering.
- 6. Do not write your name or put any special mark in the booklet that may disclose your identity, which will render you liable to disqualification. Any candidate found copying will be subject to Disciplinary Action under the relevant rules.
- 7. Use of Mobile Phone, Calculator or Log table is totally prohibited in the examination hall.
- 8. You should return the booklet to the invigilator at the end of the examination and should not take any page of this booklet with you outside the examination hall, which will lead to disqualification.
- 9. Rough work, if necessary is to be done in this booklet only and cross it through.

No additional sheets are to be used and no loose paper will be provided

FOR OFFICE USE / EVALUATION ONLY

Marks Obtained

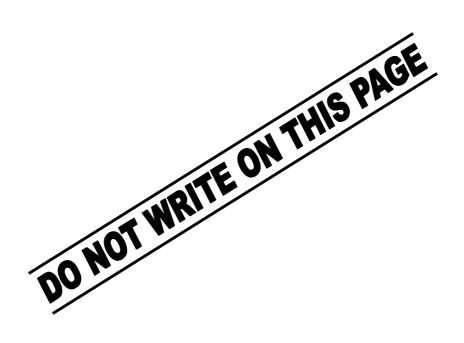
Question Number						Total Marks	Examiner's Signature
Marks Obtained							

Head-Examiner,	/Co-Ordinator	/Scrutineer

43015 (06/07)









CS/M.TECH (CSE)/SEM-2/PGCS-203/09

ADVANCED DBMS SEMESTER - 2

Time: 3 Hours]



The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Answer Question No. 1 and any four from the rest.

1.	Ansv	ver any <i>five</i> of the following:	5×2
	i)	Which index type (dense / sparse) will be suitable for locating a record fast	er?
	ii)	What is atomicity property of transaction?	
	iii)	What is the function of exclusive lock?	
	iv)	What is horizontal data fragmentation?	
	v)	Define view serializability.	
	vi)	What is vertical data fragmentation?	
2.	a)	Explain in brief sparse and dense index.	6
	b)	What do you mean by index sequential file?	3
	c)	Explain deletion algorithm of B^+ tree using example.	6
3.	a)	Why we need query optimisation ?	5
	b)	Write down the steps involved in processing a query.	5
	c)	How query tree is used to represent a relational algebra expression ? Explain	n with
		example.	5



- 4. a) What are ACID properties of a database transaction? How are they selected to the concurrency control? 5 + 5
 - b) Every conflict serialisable schedule is also view serialisable, but there are view serialisable schedules that are not conflict serialisable. Is the comment true or false? Prove your answer.
- 5. a) Teacher (T_name, emp_no, dept)

Subject (sub_no, sub_title, credit)

Student (s name, roll no, hostel)

Taught by (emp no, sub no)

Taken by (sub no, roll no, status, marks)

Write the SQL query for the following using the above mentioned database schema : $5\times 2 \label{eq:sql}$

- i) Find the teacher name who teaches subject 'Advanced DBMS'.
- ii) Find the name of the students who are studying the subject 'Advanced DBMS'.
- iii) Find out the number of student in each hostel.
- iv) Find out the name of the students who belong to 'Vivekananda' hostel.
- v) Find out the subject name which is taught by 'Dr. A. K. Sinha'.
- b) What are spatial and temporal database?

CS/M	і.тесн	(CSE)/SEM-2/PGCS-203/09 5	:.
6.	a)	What are the different types of transaction failure?	5
	b)	Explain in brief log based recovery and shadow paging recovery.	5 + 5
7.	a)	Explain the features of distributed versus centralised database.	6
	b)	Describe a reference architecture for distributed database.	9
8.	Write	e short notes on any <i>three</i> of the following:	3 × 5
	a)	Data mining	
	b)	View serializability	
	c)	Two phase locking protocol	
	d)	Data warehousing	
	e)	Object Oriented Database.	

END