Reg. No.										

MANIPAL INSTITUTE OF TECHNOLOGY

MANIPAL

(A constituent unit of MAHE, Manipal)

IV SEMESTER B.TECH. (COMPUTER SCIENCE & ENGINEERING)

MAKEUP EXAMINATIONS, JUNE 2018

SUBJECT: ESSENTIALS OF IT [CSE 3282]

REVISED CREDIT SYSTEM
(30/04/2018)

Time: 3 Hours MAX. MARKS: 50

Instructions to Candidates:

- Answer **ALL** the questions.
- Missing data may be suitably assumed.

1A.	With neat labeled diagram, explain the Fetch-Decode-Execute cycle for a given instruction ADD R1,R2.	**3M**
1B.	Explain the structure of a process along with neat diagram showing all regions of allocating memory. Also explain with neat diagram, the states of a process.	**4M**
1C.	Consider a dynamic paging scheme where the page numbers and request sequence is as follows: 3,1,3,4,2,4,1,2 ,3,1,2,4,2,3,1,3.Given total free frames as 3, calculate the number of page faults that occur for both Least Recently Used (LRU) and LFU algorithms	**3M**
2A.	Explain Producer and Consumer problem with fixed size buffer	**3M**
2B.	The CPU time for different processes is given below as given in Table Q.2B. Find the waiting time for each process and average turnaround time and average waiting time using preemptive priority scheduling algorithm. Assume lowest priority value having lowest priority of the process, preemption happens when a higher priority process arrives.	**4M**

Table Q.2B

Processes	CPU Time (milliSec)	Arrival Time (milliSec)	Process Priority
P1	12	0	0
P2	4	4	2
P3	4	3	1
P4	10	5	3

2C.	Explain volume-structure of the disk in MS-DOS and mention the function of its each field.	**3M**
3A.	What are the various notations used in E-R Mode and their meaning.	**3M**
3B.	Define 3NF with suitable example. What are the constraints in it? What are the merits and Demerits of normalization?	**4M**
3C.	Explain Full functional dependency, partial functional dependency and transitive dependencies with suitable example	**3M**
4A.	What is Views in DBMS? Differentiate between horizontal and vertical views with suitable example.	**4M**
4B.	Write a note on Restriction , Project and cartesian Join with an example to each	**3M**
4C.	Consider the following table **CustomerPurchase** CustomerId | ItemId | QtyPurchased | BillId | NetPrice C1 | STN001 | 5 | 1001 | 150 C2 | GRO001 | 1 | 1002 | 10 C1 | ELC001 | 1 | 1001 | 5000 C2 | STN002 | 2 | 1002 | 400 C3 | STN002 | 2 | 1003 | 400 **Item** ItemId | ItemName | UnitPrice | Class STN001 | Pen | 30 | A BAK003 | Bread | 20 | A GRO001 | Poteto | 10 | A ELC001 | Mobile | 5000 | C ELC004 | iPod | 600 | B STN002 | Diary | 200 | B Table 4.C i. Retrieval using subqueries ,write SQL statement **List the id of the customer and sum of total purchase amount for those customers whose sum of total purchase amount is more than the average of the sum of total purchase amount of other customers using CustomerPurchase table. Give output of the query.** ii. List the 2nd highest UnitPrice from the Item table.	**3M**
5A	What is Embedded SQL? What are the limitations of SQL?	**3M**
5B	List different types of constraints .using SQL CREATE function show implementation of Self Referencing foreign key in Employee_Details table with following attributes. Column Name | Data Type | Constraints Employee_ID | Number(6) | Primary Key of the table Employee_Last_Name | Varchar2(20) | Employee_First_Name | Varchar2(20) | Employe_Middle_Name | Varchar2(3) | Employee_Email | Varchar2(30) | Employee_Dept | Number(2) | Default 'HR' Manager_ID | Varchar2(30) | It can take only those valueswhicj are present in Employee_ID column	**3M**
5C.	Write a note on GRANT and REVOKE DCL statements with example	**4M**