THEORY EXAMINATION – JULY 2021		TIME – 4 Hrs.
B.TECH - reappear	**SEMESTER - VI**	**M.M. - 75**

PAPER - CSE-304	SUBJECT- ESSENTIALS OF INFORMATION TECHNOLOGY

INSTRUCTIONS TO BE FOLLOWED

- **The candidates will be required to attempt All questions in Part-A and Part-B (Compulsory Sections). Attempt any four questions from Part-C selecting at least one from each unit.**

- **Allotted time for examination is 4 hours that includes time for downloading the question paper, writing answers, scanning of answer sheets and uploading the sheets on the Attendance Sheet Cum Answer Sheet Uploading google form.**

- **The PDF files should be saved as Roll No. and Subject Code.**

- **Maximum Page Limit should be 36 (Thirty Six) for attempting the question paper on A4 sheets which could be downloaded and printed from the sample sheets given in the UIET Website.**

- **Over-attemptation should be avoided.**

- **Handwriting should be neat and clean and diagrams should be clear and contrasted.**

- **The candidate should not write their Mobile No. otherwise Unfair Means Case will be made.**

- **While attempting the paper, the candidate will use blue/black pen only.**

- **Before attempting the paper, the candidate will ensure that he/she has downloaded the correct question paper. No complaint for attempting wrong question paper by the candidate will be entertained.**

- **Candidate must ensure that he/she has put his/her signature on each page of the answer sheet used by him/her. Answer sheet without the signature of the candidate will not be evaluated.**

- **Attempt parts A, B & C separately. Do not inter-mix them. Write neatly & mention the question number clearly.**

PART-A (15 Marks)

Q. No. – 1 Answer the following questions.   **15x1=15**

(i)	What is difference interface and abstract class in declaration and application wise.	2
(ii)	What is casting and write syntax to cast integer to byte data types	2
(iii)	What is syntax of for loop in java using break keywords.	1
(iv)	What do you mean by private accessifier and write syntax of private access in Java	2
(v)	What is the range value of byte, char and short data type in Java?	1
(vi)	What is use of "this" keyword in Java?	1
(vii)	What is complexity of insert sort algorithm?	1
(viii)	What is multiple inheritance and which keyword is used for implementation of this inheritance in java.	1
(ix)	What is difference between final and finally in java and also write its syntax.	2
(x)	Write syntax of Query of implementing foreign key if employee and department table have common DeptId field.	1
(xi)	What is condition that says that this table is not in of 1st Normal form?	1

PART-B (20 Marks)

	UNIT-I	
2	Write an algorithm of selection sort and explaint it with the help of example.	5
	UNIT-II	
3	What are the different types of Constructor and its features in Java. Write a program to find Area of Circle using these constructors.	5
	UNIT-III	
4	What is Static Polymorphismin and Dynamic polymorphism in java. Write a program by taking examle of 'CAR' and its new version ' MARUTI' with the help of Dynamic polymorphism.	5
	UNIT-IV	
5	What do you mean by 3NF . Explain the use of 3nf with the help of example since 1st Normal Form.	5

PART-C (40 Marks)

	UNIT-I	
6	What is algorithm of Quick Sort and insertion sort Algorithm and also write its complexity	10
7	(a) What is Queue and write an algorithm to insert and delete data from Queue ? (b) Write an algorithm of binary search and its time complexity.	5 5

	UNIT-II	
8	What is UML and its different types . Explain Object diagram and Component diagram with the help of example in Java .	4+6
9	(a) Write a program to print fabonnic series with the help of command line argument. (b) What is difference between array of character and string. Write a program to find character location, concatenation, change to capital letter and substring in JAVA using string.	4+6
	UNIT-III	
10	What do you mean by inheritance and explain Single , Multilevel and Multiple inheritance with a single appropriate example.	10
11	What is aggregation and association also write a program in java to show aggregation and association.	10
	UNIT-IV	
12	What do you mean Normalization and explain 2NF and BCNF with an appropriate example	10
13	What is diference between table and views. Write an query to create table , remove table, add primary key after creation of table, add user, remove user and find name of employees whose salary is greater than 50,000 in proper format and also write its ouput.	10