Sardar Patel Institute of Technology

Bhavan's Campus, Munshi Nagar, Andheri (West), Mumbai-400058, India

(Autonomous College Affiliated to University of Mumbai)

Mid Semester Examination

September 2018

Max. Marks: 20 | **Duration: 60 Min**

Class: T.E. | **Semester: V**

Course Code: IT53 | **Branch: Information Technology**

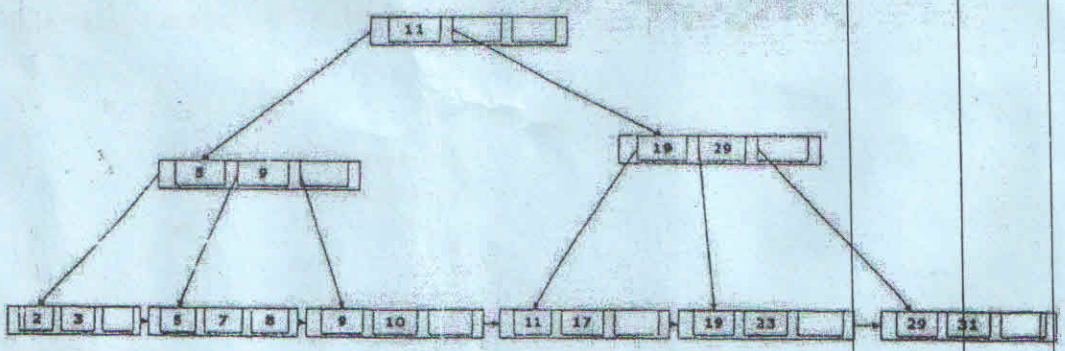
Name of the Course: Advanced Database Systems

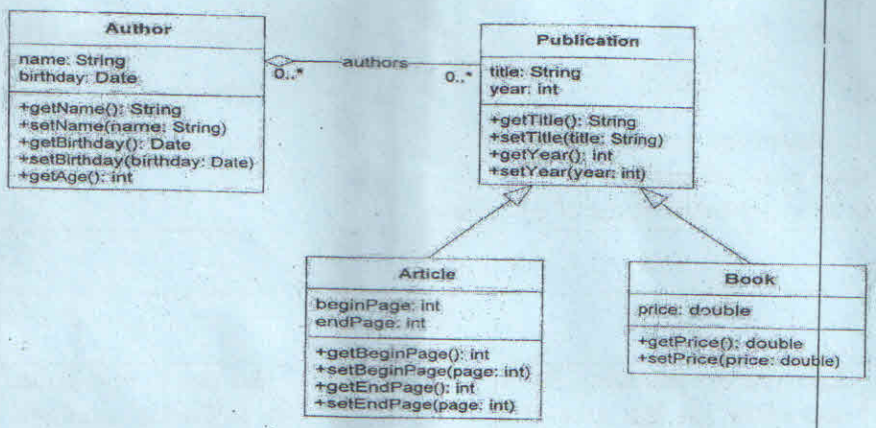
Instruction:

(1) All questions are compulsory

(2) Draw neat diagrams

(3) Assume suitable data if necessary

Q No.		Max. Marks	CO
Q.1	Analyze the following B+ tree and illustrate the delete operation and show the B+ tree after each deletion for following numbers are deleted : 23,19,17,10,11 	5	CO2
Q.2	Consider the following relational schema and set of applications that are frequently accessing the relation ; Department(DeptNo, DeptName, College , Phone) Application1: Find the department details of SPIT college. Application2: Find the phone of IT department. Create the horizontal fragmentation using simple predicates and minterm predicates according to the requirement and check for the correctness of the fragments.	5	CO1
Q.3	Consider airline booking system and if you want to implement the following schema. Customer (CustomerId, Title, FirstName, LastName, Gender, Age, Address, Email) Flight(FlightNo, DepartureDate, DepartureTime, ArrivalDate, ArrivalTime) Seat(FightNo, CustimerId, DepartureDate, SeatNo, Class) Ticket(SerialNo, FlightNo, DepartureDate, SeatNo, CustomerId) Choose and justify any four transparencies are used for designing the distributed database system for airline booking systems.	5	CO1

	OR Three Phase Commit protocol is designed as nonblocking protocol. With the help of diagram show the 3PC protocol actions and describe in brief three phases of 3PC.	5	CO1
Q.4	Develop a ODL schema for the following database.  	5	CO1