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R. V. COLLEGE OF ENGINEERING

Autonomous Institution affiliated to VTU

V Semester B. E. Examinations April/May-18

Computer Science and Engineering

JAVA AND JEE (ELECTIVE)*Time: 03 Hours**Maximum Marks: 100***Instructions to candidates:**

1. Answer all questions from Part A. Part A questions should be answered in the first three pages of the answer book only.
2. Answer five full questions from Part B.

PART A

1	1.1	Write the output for the following statements: i. <code>system.out.println(0xf);</code> ii. <code>system.out.println(8>>>2).</code>	02
	1.2	Is it possible to override the constructors? Justify your answer.	02
	1.3	What is the output/error of the following program? <code>public class A</code> <code>{</code> <code>public static void main(String a3[])</code> <code>{</code> <code>float f1=101.22;</code> <code>system.out.println(f1);</code> <code>}</code> <code>}</code>	01
	1.4	_____ method of thread class is used to move a thread to a dead state.	01
	1.5	What will be the output/error of the following code segment? Justify the answer. <code>int a[]={1,2,3};</code> <code>int b=1;</code> <code>try</code> <code>{</code> <code>int C=a[4]/b-a[1];</code> <code>}</code> <code>catch(Exception e)</code> <code>{</code> <code>system.out.println("Error");</code> <code>}</code> <code>catch(arrayIndexOutOfBoundsException e1)</code> <code>{system.out.println("ArrayIndexError");}</code>	02
	1.6	Define chained Exceptions. List out the methods of throwable to handle chained exceptions.	02
	1.7	List out the three different constants that are used in scrollable resultset.	01
	1.8	_____ exception is thrown when an object is incompatible with the elements in the deque.	01

1.9	What are the two exception classes that are defined in javax.serveletpackage.	01
1.10	List out the different types of JSP tags.	02
1.11	What is the use of javap tool?	01
1.12	Differentiate between boxing and unboxing .	02
1.13	List out the static final variables of thread class to specify the priorities.	01
1.14	Which type of driver provides JDBC access via one or more ODBC drivers?	01

PART B

2	a	Describe various levels of access protection available for packages and their implications.	05
	b	Define constructor. What are its special properties? How it is different from an instance method?	06
	c	What is dynamic method dispatch? Explain with an example.	05
OR			
3	a	Discuss the significance of super and final keywords in Java Language with an example program.	06
	b	Differentiate between single, multilevel and multiple inheritance in Java. Illustrate it with an example for each type.	10
4	a	What is an exception in Java? Write a program to illustrate the usage of throw, throws and finally for the purpose of exception handling.	08
	b	What is the need of synchronization? Write a program to demonstrate the usage of “ synchronized” block.	08
OR			
5	a	Create a thread type class by implementing an appropriate interface. It should print the thread name as “thread one” twenty times.	04
	b	Create a custom exception class called Student Failed Exception. Write a program to throw the Student Failed Exception and handle it appropriately.	08
	c	What are the uses of following methods in threads? And also indicate whether they throw any exceptions.	
		i) Suspend and resume. ii) isAlive and Join.	04
6	a	Explain the methods for each of the following collection interfaces.	
		i) Queue ii) Dequeue	05
	b	Give Java syntax for the following:	
		i) Connect to a database using JDBC/ODBC bridge that has url="JDBC:ODBC:SDB", Username="Java" and password="J123". ii) Execute a query “select student-marks from student” over the connected database. iii) Count the number of students with condition student-marks≥40.	06
	c	How will you access a collection via an interface Iterator?	05
OR			

7	a	With a programming example, explain the following collection classes i) Array list. ii) Linked list.	06
	b	Write short notes on i) DBMS transaction processing. ii) Prepared statement object.	10
8	a	Write a Java Servlet program and describe the steps that are involved in the execution of a servlet.	10
	b	Write a JSP program to create and read session attributes.	06
OR			
9	a	Explain the following methods with a servlet program. i) addcookie ii) getcookie	06
	b	Write a JSP program to define and invoke a method and an overloaded method.	05
	c	Briefly explain the architecture of MVC.	05
10	a	List out the advantages and disadvantages of native methods in Java.	04
	b	Discuss in detail about the usage of JNI to call a C program from Java.	12
OR			
11	a	With a programming example, explain how the static methods can be called from the native code.	08
	b	What are Java Native APIs?	04
	c	Write short notes on error handling techniques in JNI.	04

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R. V. COLLEGE OF ENGINEERING
Autonomous Institution affiliated to VTU
V Semester B. E. Fast Track Examinations July-18
Computer Science and Engineering
ADVANCED ALGORITHMS (ELECTIVE)

*Time: 03 Hours**Maximum Marks: 100***Instructions to candidates:**

1. Answer all questions from Part A. Part A questions should be answered in first three pages of the answer book only.
2. Answer FIVE full questions from Part B.

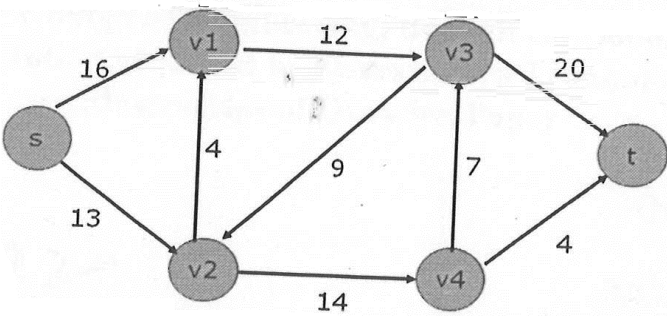
PART-A

1	1.1	What is the worst case time complexity of the naïve string matching algorithm? Write the worst case scenario example.	02
	1.2	Give a tight asymptotic upper bound on the solution for the following recurrence. $T(n) = 2T\left(\frac{n}{8}\right) + \sqrt[3]{n}$.	02
	1.3	The Preprocessing time and Matching time of string matching with finite automation is ____ and ____.	02
	1.4	For Bellman Ford algorithm, write the code which performs a relaxation step on edge(u, v) in O(1) time.	02
	1.5	The residual capacity of an augmenting path p is given by	01
	1.6	Define flow network.	01
	1.7	What is the depth of the parallel FFT circuit?	01
	1.8	Find the gcd of 621 and 483.	02
	1.9	List the properties of Red-Black trees.	02
	1.10	Binomial queue is not a heap-ordered tree but rather a collection of heap-ordered trees, known as a ____.	01
	1.11	State Fermat's little theorem.	01
	1.12	The composite numbers which fails Fermat's test is ____.	01
	1.13	The iterative FFT implementation runs in time ____.	01
	1.14	What is Interpolation?	01

PART-B

2	a	Explain the Master method for solving recurrences. For the following recurrence, give an expression for the runtime $T(n)$ if the recurrence can be solved with the Master Theorem. $T(n) = T(9n/10) + n$.	08
	b	Write Knuth-Morris-Pratt algorithm to compute the prefix function and also compute the prefix function π for the pattern ababaca.	08
OR			
3	a	What is a recurrence? Use a recursion tree to determine a good asymptotic upper bound on the recurrence $T(n) = 3T\left(\frac{n}{4}\right) + cn^2$. Also determine the cost for the entire tree.	08

b	What is the difference between amortized analysis and average-case analysis? Illustrate the potential method for stack operations.	08
4	<p>a Show the execution of Single source paths in DAG for the given graph in Fig:4A.</p> <div data-bbox="587 349 1114 763" data-label="Diagram"> <p style="text-align: center;">Fig: 4A</p> <p>b Explain with an algorithm and example, the working procedure of Bellman Ford algorithm for solving the single source shortest paths problems.</p> <p style="text-align: center;">OR</p> </div>	06 10
5	a Explain Johnson's algorithm for sparse graph and analyze its efficiency.	08
	b Working modulo $q = 13$, how many spurious hits does the Rabin-Karp matcher encounter in the text $T = 2359023141526739921$ when looking for the pattern $P = 31415$?	08
6	<p>a Consider two binomial queues, H_1 and H_2 given below. Explain how to merge them.</p> <div data-bbox="368 1301 1334 1693" data-label="Diagram"> <p style="text-align: center;">H_1: H_2:</p> </div> <p>b What is maximum matching? Explain how Ford-Fulkerson algorithm can be used to compute maximum bipartite matching in an undirected bipartite graph.</p> <p style="text-align: center;">OR</p>	08 08

<div>7</div> <div>a</div>	<p>Discuss the basic Ford Fulkerson algorithm and also show the step-wise execution for the given graph.</p> 	<div>08</div> <div>08</div>
<div>8</div> <div>a</div> <div>b</div>	<p>Write the procedural steps of the RSA public-key cryptosystem. Also, consider an RSA key set with $p = 17$, $q = 23$. What value of d should be used in the secret key? What is the encryption of the message $M = 41$?</p> <p>Find all solutions to the equations $a \equiv 2 \pmod{5}$ and $a \equiv 5 \pmod{13}$.</p> <p style="text-align: center;">OR</p>	<div>08</div> <div>08</div>
<div>9</div> <div>a</div> <div>b</div>	<p>Explain with procedure, the extended form of Euclid's algorithm for the given equation $d = \gcd(a, b) = ax + by$. Also illustrate how EXTENDED_EUCLID computes $\gcd(99, 78)$.</p> <p>Explain with pseudocode and example, Miller-Rabin randomized primality test.</p>	<div>08</div> <div>08</div>
<div>10</div> <div>a</div> <div>b</div>	<p>Investigate the two ways of representing polynomials.</p> <p>Demonstrate on how to construct the tree of input vectors to the recursive calls of the recursive FFT algorithm for $n = 8$.</p> <p style="text-align: center;">OR</p>	<div>08</div> <div>08</div>
<div>11</div> <div>a</div> <div>b</div>	<p>Characterize the pseudocode for both iterative and recursive FFT algorithms.</p> <p>Discuss butterfly operation. Show how to perform the operation on two input values.</p>	<div>08</div> <div>08</div>

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R. V. COLLEGE OF ENGINEERING
Autonomous Institution affiliated to VTU
V Semester B. E. Fast Track Examinations July - 18
Computer Science and Engineering
COMPUTER NETWORKS-I

Time: 03 Hours**Maximum Marks: 100****Instructions to candidates:**

3. Answer all questions from Part A. Part A questions should be answered in first three pages of the answer book only.
4. Answer FIVE full questions from Part B.

PART-A

1	1.1	Mention the two spread spectrum techniques.	01
	1.2	Size of the sender window is _____ in selective repeat Automatic Retransmission Request (ARQ).	01
	1.3	State the purpose of block coding.	01
	1.4	The MAC address on Ethernet network is 5A:8F:72:4A:64:3C. Identify the type of this address.	01
	1.5	What is the Nyquist sampling rate for a band pass signal having minimum and maximum frequency at 30 kHz and 85 kHz.	01
	1.6	A signal has lower frequency of 400 kHz and bandwidth of 300 kHz. Compute the highest frequency.	01
	1.7	The purpose of Internet Control Message protocol is _____.	01
	1.8	Six signals of bandwidth 250 kHz are to be multiplexed using FDM. If guard band size is 15 kHz, what is the bandwidth of FDM link?	01
	1.9	List the different persistent techniques used by carrier sense multiple access (CSMA) protocol.	01
	1.10	The minimum frame size required by a CSMA/CD protocol is _____.	01
	1.11	The two transfer modes of HDLC are _____ and _____.	01
	1.12	An Ethernet MAC sub-layer receives 70 bytes of data from the upper layer. How many types of padding must be added to the data?	01
	1.13	A link of 45 kHz bandwidth has a SNR of 30 dB. Calculate the upper limit on the data rate.	02
	1.14	It is required to send data at a rate of 4MBps. What is the minimum required bandwidth, using a combination of 8B/10B and NRZ - I?	02
	1.15	Generate the Walsh table for 4 stations where $W_1 = [-1]$.	02
	1.16	Four connections having data rate of 3Mbps are time division multiplexed. Estimate the speed of the multiplexed link? Identify the frame rate required.	02

PART-B

2	a	Discuss the star and bus topologies of network giving advantages and disadvantages.	05
	b	Explain the various components of data communication system.	05

	c	A video of size 27 MB is transmitted across a distance of 45 km using a link having capacity of 24 Mbps. Calculate the propagation delay and transmission time. If there are 6 routers on the way having processing speed of 5 milliseconds, what is the latency (total delay)? Assume $c = 3 \times 10^8 \text{ m/s}$.	06
		OR	
3	a	Differentiate between point to point and multipoint connections.	05
	b	After traversing a distance of 1 km, power at the output and input of a communication link is 6 kW and 15 kW respectively. Find the attenuation in decibels. What is the attenuation in decibels after traversing a distance of 8 km.	05
	c	What are the major reasons for signal impairments during transmission? Discuss the same.	06
4	a	Encode the data stream 1011100101 using NRZ – L, NRZ – I, RZ, Manchester, Differential Manchester, AMI, Pseudo ternary and MLT – 3 schemes.	08
	b	Explain the various steps involved in the Pulse Code Modulation (PCM).	08
		OR	
5	a	An analog signal of 700 kHz is digitized using 512 levels. i) What is the bit rate? ii) What is the SNR in decibels? iii) How much is the channel bandwidth to transmit this digitized signal?	06
	b	Illustrate the various types of transmission modes and their scope in data communication.	06
	c	Encode the data 100000000010 using B8ZS and HDB3 techniques.	04
6	a	Explain the functionalities of data link layer, physical layer and presentation layer of OSI reference model.	08
	b	Find the checksum for the following data. 0x45A, 0xA7B4, 0x8F42 and 0x6F3D. Show the verification process at the receiver.	08
		OR	
7	a	Explain the various levels of addressing used in the operation of Internet.	08
	b	The sender and receiver uses a CRC where the generator is 1011. Receiver receives a codeword 11001011. What is the action taken by the receiver?	04
	c	Draw the ISO/OSI reference model and TCP/IP model. How do the layers of these models correlate?	04
8	a	Explain the character oriented protocol for data link control.	06
	b	Demonstrate the working of the Go-Back-N protocol with the help of sliding window. Write the pseudocode at the sender and receiver site.	10
		OR	

9	a	Explain the <i>PPP</i> frame format and the transition diagram of the link stages.	08
	b	Differentiate between the following: i) Stop and wait <i>ARQ</i> versus Go-Back- <i>N ARQ</i> ii) Go-Back- <i>N ARQ</i> versus Selective-Repeat <i>ARQ</i> iii) <i>HDLC</i> versus <i>PPP</i> .	08
10	a	Explain the token passing method of multiple accesses.	05
	b	Describe the hidden and exposed station problems in the wireless medium.	05
	c	Mention the properties of orthogonal sequences. Illustrate each property by taking an example of 4 stations.	06
OR			
11	a	Draw the <i>IEEE</i> 802.11 frame format and also expand the frame control field. Explain the functionality of various fields.	10
	b	Discuss the taxonomy of multiple access protocols.	06

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R. V. COLLEGE OF ENGINEERING

Autonomous Institution affiliated to VTU

V Semester B. E. Fast Track Examinations July-18

Computer Science and Engineering

MICROPROCESSOR AND MICROCONTROLLER

Time: 03 Hours

Maximum Marks: 100

Instructions to candidates:







5. Answer all questions from Part A. Part A questions should be answered in first three pages of the answer book only.
6. Answer FIVE full questions from Part B.

PART-A

1	1.1	Indicate the value of <i>BHE</i> and <i>A0</i> signals when 8086 fetches data from both <i>ODD</i> & <i>EVEN</i> memory location.	02
	1.2	Compute the physical address of data for the following instructions. Given $DS = 3200H, CS = 5000H, ES = 7000H, SS = 4000H, SI = 3085H, AX = 2012H, SP = IFFFH, CX = 3505H, DX = 4302H$ <i>MOV CX, 10H[SI]</i> <i>POP DX</i>	02
	1.3	Find the value of <i>AL</i> and Carry flag after the execution of: <i>STC</i> <i>MOV AL, 7FH</i> <i>RLC AL, 1</i>	02
	1.4	Given $SP = 2500H$, Indicate the value of <i>SP</i> after the execution of the following program(show how the final of <i>SP</i> is arrived) <i>PUSH AX</i> <i>PUSH CX</i> <i>POP AX</i> <i>POP CX</i> <i>POPF</i>	02
	1.5	Prepare the control word for 8255 simple <i>I/O</i> , <i>PA</i> as input, <i>PB</i> as output, <i>PC</i> (lower) as input & <i>PC</i> (upper) as output. Write the word to Control Register, whose address is <i>26h</i> .	02
	1.6	One <i>LED</i> is connected to 8255 <i>PC0</i> bit, write 8255 <i>BSR</i> control words to make this <i>LED</i> on and off.	02
	1.7	What is the value stored in register <i>A</i> of 8051, after complete execution of the following code. <i>MOV A, #0</i> <i>MOV R2, #10</i> <i>MOV R0, #0</i> <i>AGAIN: INC R0</i> <i>ADD R2, R0</i> <i>DJNZ R2, AGAIN</i>	02
	1.8	Give the pin configuration of <i>PORT3</i> in 8051 microcontroller chip.	02
	1.9	What is <i>TMOD</i> register format? Write the <i>TMOD</i> register value for Mode 2 Timer1, Mode 2 Timer0.	02
	1.10	Write the program for 8051 to receive bytes of data serially at 9600 baud rate continuously and put them in <i>P0</i> . Use 8-bit data and 1 stop bit.	02

PART-B

2	a	Draw the neat diagram of 8086 Architecture and explain in detail.	10
	b	List the segment registers in 8086 and discuss the advantages of segmentation and pipelined architecture.	06
OR			
3	a	Explain the flag register of 8086 in detail. Give example for each flag.	08
	b	What is the function of the following instruction in minimum mode operation of 8086? Explain: i) <i>DEN</i> ii) <i>INTA</i> iii) <i>DT/R</i> iv) <i>HLDA</i> .	04
	c	Explain Physical memory organization in 8086 with a neat diagram.	04
4	a	Name the instruction and Demonstrate with an example program the implementation support provided by 8086 to implement the look up tables.	06
	b	Compute the output of the registers- <i>AX, BX, DX</i> after executing the following instructions, also mention the effect of <i>CBW</i> and <i>CWD</i> instructions. <i>MOV BX, 1122H</i> <i>MOV DX, 2233H</i> <i>MOV AL, -2</i> <i>CBW</i> <i>CWD</i>	05
	c	Write an 8086 Assembly Language Program to compute the following expressions: $ANS = (X * Y * 50) / 3$.	05
		OR	
5	a	Write an 8086 <i>ALP</i> procedure to read 2 digit hex number from the keyboard using <i>DOS</i> service and store in the memory.	06
	b	Describe the use of Interrupt Vector Table in 8086.	05
	c	Write an 8086 <i>ALP</i> to transfer block of data (block move) using string instructions.	05
6	a	Interface two $8K \times 8$ <i>EPROM</i> and two $4K \times 8$ <i>RAM</i> to 8086 using suitable memory maps. Explain with schematic of interfacing diagram and address decoding.	10
	b	Using 74LS373 output ports and 7-segment displays with port address <i>08H</i> , design a seconds counter that counts from 0 to 9. Draw the suitable hardware schematic and write <i>ALP</i> for this problem. Assume that delay of 1 second is available.	06
OR			
7	a	Write an 8086 <i>ALP</i> to read data from input port (<i>20h</i>) connected to 8bit Switch, invert the data and count the number of 1's and display the count on output port (<i>30h</i>).	06

	b	Interface an 8255 with 8086 to work as an <i>I/O</i> port. Initialize port <i>A</i> as output port, Port <i>B</i> as input port and port <i>C</i> as output port. Port <i>A</i> address should be 0740H. Write a program to sense switch positions <i>SW0 – SW7</i> connected to port <i>B</i> . The sensed pattern has to be displayed on port <i>A</i> , to which 8 <i>LEDs</i> are connected, while port <i>C</i> displays the numbers switches out of the total 8 switches.	08																													
	c	What is chip select (<i>CS</i>) in pin memories?	02																													
8	a	Explain 8051 architecture with schematic diagram.	05																													
	b	Assume that <i>XTAL</i> = 11.0592 MHz. What value need to be loaded to timer's registers if delay of 5 ms(milliseconds) has to be generated? Write the program for Timer 0 to get pulse on <i>P2.3</i> .	05																													
	c	What is <i>IE</i> (Interrupt Enable) register format? Show the instructions to: i) Enable the serial interrupt, Timer 0 interrupt and external hardware interrupt 1 ii) Disable Timer 0 interrupt iii) Disable all interrupts with single instruction.	06																													
		OR																														
9	a	Describe addressing modes of 8051 with example.	05																													
	b	Describe the format of <i>SCON</i> register in 8051. Demonstrate usage of <i>SCON</i> with an example.	05																													
	c	Write a <i>C</i> program in 8051 using interrupts to do the following: i) Receive data serially, and send it to <i>P0</i> ii) Read port <i>P1</i> , transmit data serially, and give a copy to <i>P2</i> iii) Make Time0 generate a square wave of 5 KHz frequency on <i>P0.1</i> Assume that <i>XTAL</i> = 11.0592 MHz. Set the baud rate 4800.	06																													
10	a	Interface 4 × 4 keypad with 8051 microcontroller. Explain the flow of working of which key is pressed and deleted.	08																													
	b	Draw the interfacing of <i>DAC</i> with 8051 microcontroller. Write a program to generate full sine wave form using <i>DAC</i> interface.	08																													
		OR																														
11	a	Interface a stepper motor with 8051. Write a program to rotate the motor 64 degree in clockwise direction. The motor has step angle of 2 degree. Use the four sequence given in the table.																														
		<table><tr><th><i>Clockwise</i></th><th><i>Step#</i></th><th><i>Winding A</i></th><th><i>Winding B</i></th><th><i>Winding C</i></th><th><i>Winding D</i></th><th><i>Counter Clockwise</i></th></tr><tr><td rowspan="4"></td><td>1</td><td>1</td><td>0</td><td>0</td><td>0</td><td rowspan="4"></td></tr><tr><td>2</td><td>0</td><td>1</td><td>0</td><td>0</td></tr><tr><td>3</td><td>0</td><td>0</td><td>1</td><td>0</td></tr><tr><td>4</td><td>0</td><td>0</td><td>0</td><td>1</td></tr></table>	<i>Clockwise</i>	<i>Step#</i>	<i>Winding A</i>	<i>Winding B</i>	<i>Winding C</i>	<i>Winding D</i>	<i>Counter Clockwise</i>		1	1	0	0	0		2	0	1	0	0	3	0	0	1	0	4	0	0	0	1	08
<i>Clockwise</i>	<i>Step#</i>	<i>Winding A</i>	<i>Winding B</i>	<i>Winding C</i>	<i>Winding D</i>	<i>Counter Clockwise</i>																										
	1	1	0	0	0																											
	2	0	1	0	0																											
	3	0	0	1	0																											
	4	0	0	0	1																											
	b	Describe the basic operation of the following: i) Relays ii) Optoisolators iii) <i>ADC</i> iv) <i>LCD</i> .	08																													

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R. V. COLLEGE OF ENGINEERING
Autonomous Institution affiliated to VTU
V Semester B. E. Examinations Fast Track July-18
Computer Science and Engineering
DATABASE MANAGEMENT SYSTEMS

*Time: 03 Hours**Maximum Marks: 100***Instructions to candidates:**

1. Answer all questions from Part A. Part A questions should be answered in first three pages of the answer book only.
2. Answer FIVE full questions from Part B.

PART-A

1	1.1	Define the term data abstraction.	02
	1.2	Define data integrity.	02
	1.3	When are two relations said to be union compatible?	02
	1.4	What are triggers in SQL?	02
	1.5	Illustrate trivial functional dependency.	02
	1.6	What is normalization?	02
	1.7	What are the properties of transaction?	02
	1.8	What are the 2 modes of locking?	02
	1.9	Define recovery manager. What are the properties of transactions that it preserves?	02
	1.10	Mention the various access privileges that a user can have on a relation.	02

PART-B

2	a	Explain the 3-level architecture of DBMS with the help of an example. Mention its advantages also.	10
	b	Identify the various responsibilities of a DBA.	06
OR			
3	a	Explain the various types of constraints on relationship types of the E-R model.	08
	b	Demonstrate the design issues that are to be considered while designing an E-R diagram with examples.	08
4	a	Summarize the different types of data integrity with examples each.	08
	b	Explain with examples, how aggregate functions and grouping is performed in relational algebra?	08
OR			
5	a	Explain the different types of join operations in relational algebra.	08

	b	Demonstrate the violations of constraints that are encountered when the update operation is applied to a relation.	08
6	a	Explain embedded SQL. How are variables declared and used in embedded SQL? Explain with examples.	08
	b	What are triggers? How are they created? Explain with an example how triggers offer a powerful mechanism for dealing with the changes to database?	08
		OR	
7	a	Interpret 2NF, 3NF, BCNF and 4NF with examples.	08
	b	Explain join dependency and 5NF with examples.	08
8	a	Evaluate the two different forms of schedule equivalence with examples.	08
	b	What is a precedence graph? Explain how it can be used to test the conflict serializability of a schedule.	08
		OR	
9	a	What is phantom problem for concurrency control and how does index locking resolve this problem?	08
	b	Discuss basic time stamp ordering. How is it different from strict time stamp ordering protocol?	08
10	a	What are log based recovery techniques? Explain the deferred and immediate modification versions of the log based recovery technique with the help of example.	10
	b	Explain the three phases of the ARIES recovery algorithm.	06
		OR	
11	a	What is an access control? Demonstrate the two approaches for access control in DBMS.	08
	b	What is Role-based access control? Which SQL commands are used for creating and destroying roles?	08