Shri Shankaracharya Institute of Professional Management & Technology, Raipur

Department of Information Technology

Class Test -01 Session- Jan-Jun 2022 Month - June 2022

Sem- 4th Subject: Internet of Things B0333415 (033)

Time Allowed: 2 hrs. Max Marks: 40

Attempt any 5 questions. All questions carry equal marks.

Q. No.	Questions	Marks	Levels of Bloom's taxonomy	COs
1.	Define IoT and Its characteristics.	[8]	Reminder	CO1
2.	Define various communication models and APIs of IoT	[8]	Understanding	CO1
3.	Differentiate between IoT and M2M?	[8]	Understanding	CO2
4.	Describe various gateways used in M2M.	[8]	Understanding	CO2
5.	Describe physical design of an IoT.	[8]	Understanding	CO1
6.	Describe the architecture of SUN.	[8]	Reminder	CO2

****Best of luck****

Shri Shankaracharya Institute of Professional Management & Technology, Raipur

Department of Information Technology

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Sem- 4th Subject: Internet of Things B0333415 (033)

Time Allowed: 2 hrs. Max Marks: 40

Attempt any 5 questions. All questions carry equal marks.

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2.	Define various communication models and APIs of IoT	[8]	Understanding	CO1
3.	Differentiate between IoT and M2M?	[8]	Understanding	CO2
4.	Describe various gateways used in M2M.	[8]	Understanding	CO2
5.	Describe physical design of an IoT.	[8]	Understanding	CO1
6.	Describe the architecture of SUN.	[8]	Reminder	CO2

****Best of luck****

Shri Shankaracharya Institute of Professional Management & Technology

Department of Information Technology

Class Test – I Session-Jan-June, 2022 Month-June

Semester- IT 4th **Subject-** : Operating System **Code-**: B033414(033)

Time Allowed: 2 hrs Max Marks: 40

Note: -Answer any 5 questions.

<table>
<tr><th>Q.N.</th><th>Questions</th><th>Marks</th><th>Levels of Bloom's Taxonomy</th><th>COs</th></tr>
<tr><td>1.</td><td>What is an OS? Explain the functions and objectives of OS.</td><td>[8]</td><td>Understand</td><td>CO1</td></tr>
<tr><td>2.</td><td>Describe different types of OS.</td><td>[8]</td><td>Understand</td><td>CO1</td></tr>
<tr><td>3.</td><td>Explain PCB with a neat diagram</td><td>[8]</td><td>Understand</td><td>CO2</td></tr>
<tr><td>4.</td><td>What is a process? Explain the process states.</td><td>[8]</td><td>Understand</td><td>CO2</td></tr>
<tr><td>5.</td><td>Consider the set of 5 processes whose arrival time and burst time are given below
<table>
<tr><th>Process Id</th><th>Arrival time</th><th>Burst time</th></tr>
<tr><td>P1</td><td>3</td><td>1</td></tr>
<tr><td>P2</td><td>1</td><td>4</td></tr>
<tr><td>P3</td><td>4</td><td>2</td></tr>
<tr><td>P4</td><td>0</td><td>6</td></tr>
<tr><td>P5</td><td>2</td><td>3</td></tr>
</table>
If the CPU scheduling policy is SJF preemptive, calculate the average waiting time and average turn around time.</td><td>[8]</td><td>Apply</td><td>CO2</td></tr>
</table>

Shri Shankaracharya Institute of Professional Management & Technology

Department of Information Technology

Class Test – I Session- Jan-June, 2022 Month- June

Sem- 4th Subject- Database Management System Code- B033412(033)

Time Allowed: 2 hrs Max Marks: 40

Note: - Question1 to 5 is compulsory, Carry 2 marks each. Attempt any 5 from question 6 to 11. All carry 6 marks.

Q.N.	Questions	Marks	Levels of Bloom's taxonomy	COs
	Part-I			
1.	Write an example to demonstrate Rollback,commit and savepoint.	[2]	Understanding, Applying	CO5
2.	Define Schema & Instances?	[2]	Applying	CO4
3.	What is multi valued attribute?	[2]	Applying	CO1
4.	Define Constraints and what are the types of constraints?	[2]	Applying	CO1
5.	List any two significant differences between a file processing system & DBMS	[2]	Understanding	CO3
	Part-II			
6.	Write architecture of DBMS with block diagram?	[6]	Applying	CO2
7.	Construct an E-R Diagram for a hospital with a set of patients & a Set of medical doctors associated with each patient a log of the various Tests & examinations conducted?	[6]	Understanding	CO4
8.	Why Trigger was invented? What are the varios types of triggers ? Write an example for trigger.	[6]	Applying	CO3
9.	What is the need of cursor? Write an example to demonstrate cursor.	[6]	Understanding,	CO5
10.	Q 10. Schemas of two table is given by- **EMP**(empno, ename, mgr, hiredate, job, sal, comm., deptno) **Dept**(dno,dname,loc) Perform following query for both tables- i. Diplay deptno and total salary of department for only those department having total salary of department is greater than 17000. ii. Display employee number & name for employees who earn Commission. Hint-(comm.=1 if employee earn commission) iii. Calculate the annual salary of each employee. iv. List all the employee names with department names whose department no is not listed in Dept table.	[6]	Applying	CO3

	v. Display employee name & salary arranged by employee name in ascending order. vi. Display the list of employees whose name started with 'M' & salary not more than 7000.			
11.	Consider the given university schema that consist as- **Teacher** table with attributes-> T_id,T_name,dept_id,city & salary **Student** table with attributes-> S_id, S_name, S_age,city **Dept** table with attributes-> T_id, S_id, d_id, d_name Save the query using SQL-> (i) Draw E-R diagram of above table. (ii) Display all the teacher's name from IT Department . (iii) Display the name, salary & city of those whose salary is between 6000-8000. (iv) Display information of all whose salary is maximum & belonging to department 30 & 50. (v) List teacher table arranged by second column. (vi) Display name of all teacher whose name starting with 'K'.	[6]	Applying	CO1

IPMT
RAIPUR

Shri Shankaracharya Institute of Professional Management & Technology
Department of Electronics and Telecommunication Engineering

Class Test – I , Month- June 2022

Sem- ET&T 4th Subject- AEC IT – 413

Time Allowed: 2 hrs Max Marks: 40

NOTE : (1) Attempt any Five Questions.
(2) Attempt question in serial order.

Q. NO.	Questions	Marks	Levels of Bloom's taxonomy	COs
1.	Draw low frequency h parameter model for CE configuration with resistive load and calculate the expression of A_i, A_V, R_i, R_O, A_{VS} and A_{IS}.	[8]	Understanding	1
2.	For the CE amplifier circuit shown in the figure 1. Find A_i, R_i, A_v, $A_{vs,\ and}$ R_o, Using miller and dual miller method.	[8]	Apply	1
3.	What do you mean by cascaded amplifier? Find the expression for gain of an n stage cascaded amplifier.	[8]	Apply	1
4.	For the given circuits in figure 2. Find the value of input resistance, output resistance, voltage gain and current gain. The parameter are h_{ie} =1.1K, h_{fe}=50, h_{oe}=25x10-6 A/V, h_{re}=2.5x10-4.	[8]	Apply	2
5.	Describe transistor RC coupling in brief.	[8]	Apply	2
6.	Write a short note on Hybrid PI model.	[8]	Understanding	2

Fig 1.

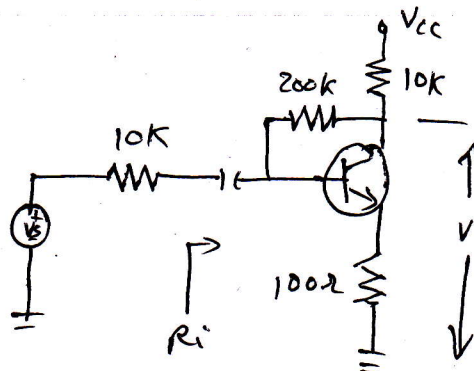
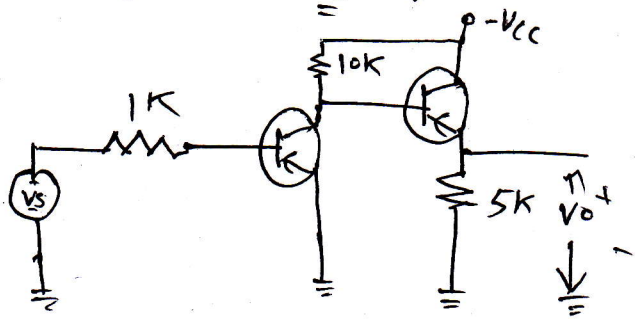


Fig 2.



Shri Shankaracharya Institute of Professional Management & Technology

Department of Information Technology

Class Test – I Session- Jan – June 2022 Month-June

Sem- IT 4th | Subject- Data Structure | Code- B033411(033)

Time Allowed: 2 hrs | Max Marks: 40

Note: - All Questions are compulsory.

Q. N.	Questions	Marks	Levels of Bloom's taxonomy	COs
	Section - I			
1.	An array X **[-15.....10, 15.....40]** requires one byte of storage. I the f beginning location is **1000**, determine the location of X **[15, 20]** Row Major Wise and Column Major Wise.	[4]	U	CO1
2.	What is a linear Linked List? a. Write an algorithm to delete middle a node from a singly linked list. b. Write an algorithm to insert a node at the first location in a singly linked list.	[8]	Apply	CO1
3.	Describe Sparse Matrix? Design an algorithm for the Transpose of a Sparse Matrix.	[4]	Apply	CO1
4.	What is Stack? Write its application and also convert the following infix expression into Postfix Expression using Stack. **X = a * (b + c) / d * e – (f / g + h)**	[4]	Apply	CO2
	Section - II			
5.	Write an algorithm to add two polynomial equations: ➢ 1st Equation: **x^4 - 3x^3 + 3x - 4** ➢ 2nd Equation: **x^4 - 2x^3 + 2x^2 + 2** and show diagrammatically how these two polynomials can be represented in an array.	[6]	Apply	CO2
6.	What is Recursion? Write a recursive function **fact (n)** to find the factorial of an integer. Diagrammatically explain, how stacking and unstacking takes place during execution of **fact(5)**.	[6]	Apply	CO2
7.	What would be the output of the following function: **void main( ) { DO(3);** **void DO(int x) {** **if(x>0) { DO(x-1); printf("%d",x); DO(x-1);}}**	[6]	Apply	CO2
8.	Evaluate following Postfix Expression using Stack: **2,3,4,*, +,8,2, /, 2 , *, -**	[2]	Apply	CO2

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