Government College of Engineering, Jalgaon

(An Autonomous Institute of Govt. of Maharashtra)

Computer Department

MSE Question Paper

Class: T. Y. B. Tech. **Sem: Odd**

Subject: CO 304UC Software Engineering **Date: 30 / 10/ 2023**

Duration: 2Hrs **Marks: 30**

NOTE: 1. Bloom's Taxonomy level is defined as per Revised 2001 model

2. All Questions are as per course Outcomes

3. Assume suitable data wherever is required.

Course Outcomes:

1. Identify unique features of various software application domains and classify Software Applications.
2. Apply an appropriate lifecycle model of software development.
3. Identify user needs and formulate software specifications.
4. Analyze software requirements by applying various modeling techniques.

Que. No.	Question	Max. Marks	CO Mapped	Bloom's Taxonomy Level
1	**Attempt any two:**			
a	Explain the concept of Data Objects.	3	CO 1	Comprehension
b	What is software? State any 3 characteristics of software.	3	CO 1	Comprehension
c	What are data attributes?	3	CO 1	Comprehension

2	Attempt any one:			
a	Explain Quality Function Deployment in detail with three types of requirements that QFD identifies.	6	CO 3	Comprehension
b	Explain negotiation and validation.	6	CO 4	Comprehension

3	Attempt all			
a	Explain software development Myths.	6	CO 3	Application
b	Explain Waterfall Model and Spiral Model state its drawbacks.	6	CO 2	Comprehension
c	Explain domain analysis with a proper diagram.	6	CO 1	Comprehension

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MSE Question Paper

Class: T. Y. B. Tech. **Sem: Odd**

Subject:CO303U FLAT **Date: 28 / 10/ 2023**

Duration: 2Hrs **Marks: 30**

NOTE: 1. Bloom's Taxonomy level is defined as per Revised 2001 model

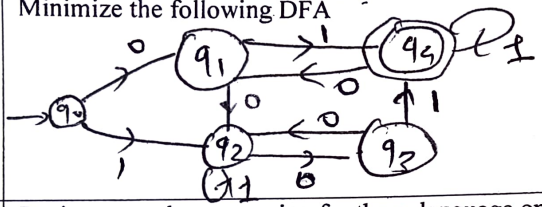
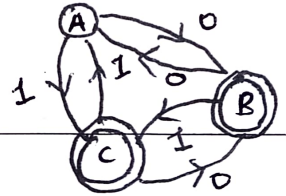
2. All Questions are as per course Outcomes

3. Assume suitable data wherever is required.

Course Outcomes:

1. Develop analytical thinking and intuition for problem solving situations in related areas of theory of computation
2. Understand and Design regular Grammar, Finite Automata, Context Free Grammar, Pushdown automat, Turing machine
3. Simplify Context Free Grammar and then convert to CNF and DNF
4. Understand pumping lemma, properties of regular languages and context free languages.

Que. No.	Question	Max. Marks	CO Mapped	Blooms Taxonomy Level
1	**Attempt any two:**			
a	Write down 5 tuples for the Non deterministic finite automata	3	CO-2	Remember
b	Design the Minimal finite automata for the language on alphabets {a,b} where the strings of language ends with ab.	3	CO-1, CO-2	Create
c	State the principal of Pumping Lemma.	3	CO-1, CO-2	Understand

2	**Attempt any one:**			
a	Minimize the following DFA 	6	CO1,CO-2	Create
b	Design a regular expression for the a. language on alphabet {a,b} where every string ends with a b. language on same alphabet where every string starts and ends with different symbol.	6	CO1,CO-2	Create
3	**Attempt all**			
a	Construct ephsilon NFA for RE (11+0)*(00+1)*	6	CO1,CO-2	Analyze
b	Design a moore machine for input integer strings represented as binary and give the output 0 for multiples of 2 and 1 for others.	6	CO1,CO-2	Create
c	Construct Regular expression for the following DFA using arden's thm 	6	CO1,CO-2	Create

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Computer Department
MSE Question Paper

Class: T. Y. B. Tech **Sem: Odd**
Subject: Computer Networks (CO301U) **Date: 26 /10/ 2023**
Duration: 2Hrs **Marks: 30**

NOTE: 1. Bloom's Taxonomy level is defined as per Revised 2001 model
2. All Questions are as per course Outcomes
3. Assume suitable data wherever is required.

Course Outcomes:

1. Learn general principles of network design and different network protocols.
2. Learn various addresses and formats.

Que No.	Question	Max Marks	CO Mapped	Blooms Taxonomy Level
1	**Attempt any two:**			
a)	Explain IEEE 802.11 addressing mechanism.	6	CO1	Understand
b)	An IP packet of size 1600 bytes passes through network segment before it reaches its destination. The header size of this packet is 30 bytes. The maximum size of an IP packet in intermediate network (MTU) is 1400 bytes. How the IP packet would be fragmented in a router. Find all the information for each fragment.	6	CO2	Apply
c)	What is the difference between Subnetting and Supernetting.	6	CO2	Analyse
2	**Attempt All**			
a)	Find the class of each address. a. 11000001 10000011 00011011 11111111 b. 14.23.120.8 c. 252.5.15.111	3	CO2	Apply
b)	In an IPv4 packet, the value of HLEN is 5, and the value of the total length field is 0x0028. How many bytes of data are being carried by this packet?	3	CO2	Apply
c)	An IPv4 packet has arrived with the first 8 bits as shown: 01000010 The receiver discards the packet. Why?	3	CO2	Apply
d)	Define the type of the following destination addresses: a. 47:20:1B:2E:08:EE b. FF:FF:FF:FF:FF:FF c.4A:30:10:21:1O:1A	3	CO2	Remember
3	**Attempt any one**			
a)	Explain the structure of IPv6.	6	CO2	Understand
b)	List the Addresses in TCP/IP. Explain physical address with example.	6	CO2	Remember

Government College of Engineering, Jalgaon
Department of Computer Engineering
Mid Semester Examination

Course Code and Course Name: CO302U DATABASE MANAGEMENT SYSTEM
Academic Year: 2023-24 **Semester: V Sem (Odd Sem)**
Max. Marks: 30 **Date: 27/10/2023**

Note: 1) **Solve any six questions**
2) All questions are as per course outcomes
3) Assume suitable data whenever is required.

Course Outcomes:
1. Create a good database design.
2. Handle relational databases.
3. Use and explain the E-R model and apply normalization for a given specification of the requirement.
4. Illustrate understanding of indexing methods.

Q. No.	Questions (Solve any six)	Max. Mark	CO mapped	Blooms Taxonomy
1	What are Joins? Explain all the types of Joins with an Example.		CO1	Understanding
2	Explain Various Relational integrity Constraints with Example.	05	CO1	Understanding
3	Summarize the steps involved in converting the ER constructs to corresponding relational tables.	05	CO3	Analyzing
4	Consider the following COMPANY database EMP(Name,SSN,Salary,SuperSSN,Gender,Dno) DEPT(DNum,Dname,MgrSSN,Dno) DEPT_LOC(Dnum,Dlocation) DEPENDENT(ESSN,Dep_name,Sex) WORKS_ON(ESSN,Pno,Hours) PROJECT(Pname,Pnumber,Plocation,Dnum) Write the **relational algebra** queries for the following (i)Retrieve the name, address, salary of employees who work for the Research department. (ii) find the names of employees who work on all projects controlled by department number 4. iii) Retrieve the SSN of all employees who either in department no :4 or directly supervise an employee who work in department number :4 (iv) Retrieve the names of employees who have no dependents (v) Retrieve each department number, the number of employees in the department and their average salary.	05	CO2	Applying

5	Define the following terms with an example. i) Key ii) Super key iii) Candidate key iv) Primary key v) foreign key	05	CO2	Applying
6	Explain the Various Clauses Which Can be applied to **select** statements with Example of each.	05	CO2	Remembering
7	Write A Short note on with Example. 1. Relational Data Model 2. Network Data Model 3. Hierarchical Data Model	05	C01	Understanding
8	Consider the following relation schema Works(Pname,Cname,salary) Lives(Pname,Street,City) located_in (Cname, city) Manager(Pname,Mgrname) Write the SQL queries for the following i) Find the names of all persons who live in the city Jalgaon. ii) Retrieve the names of all person of " Infosys" whose salary isbetween Rs .50000 iii)Find the names of all persons who lives and work in the same city iv)List the names of the people who work for "Tech M" along with the cities they live in. v)Find the average salary of "Infosys" persons	05	CO2	Applying

Government College of Engineering, Jalgaon

Name of Examination: **MSE Summer-23**

Course Code & Course Name: **(EE305UB)WSPS**

Maximum Marks: **30** Time: 11:00 – **1:00 PM**

Q. No.	Sub-question	Questions	Max. Marks	Cos Mapped	Bloom's Taxonomy
Q.1		**Attempt any three(3 x 6)**	**18**		
	a)	A 100 watt electric bulbs alighted for 2 hour everyday and 5 tubes are 40 watt. They are lighted for 4 hours everyday calculate i) energy consumed for 60 days ii) cost of electricity consumed at the rate of 3.36 per unit iii) calculate total electricity bill considering with all the respective factors Given- Transmission charges-1.35Rs/U,fuel rate-0.650, meeter rent–115, electrical duty charge-16.00%	06	CO2	L4
	b)	Discuss the Indian energy scenario regarding the following energy supply i)coal supply ii) oil supply iii) natural gas supply iv) electrical energy supply v) final energy consumption vi) Nuclear and hydro power	06		
	c)	With the help of figure How the solar radiation reaches on collector surface? And explain these radiations in detailed manner	06		
	d)	Calculate the monthly average radiation falling on a panel facing south pole 26^0 given the following data Location:-UP(28^0 23' N, 77^0 12' E) Month-october Time-11:00 – 12:00 h(LAT) Assume groung reflectivity= 0.2, Ig= 2350KJ/m^2 h; Id= 986KJ/m^2.h	06	CO4	L4
Q. 2		**Attempt any three of the following (3 X 4):**	**12**		
	a)	Draw the spectral power density of sunlight for UV, visible and infrared irradiance also write its component & discuss this irradiance with different ranges of wavelength	04	CO3	L3
	b)	Define following terms i) lines of longitude & parallel of latitude ii)clarity index iii) solar constant iv) Hour angle & Zenith angle	04	CO3	L2
	c)	Calculate the angle of declination and number of day length for June 21st and March 21st at Delhi location latitude ($77^0$12'E)	04	CO4	L2
	d)	Write the advantages and limitations of renewable enery sources	04	CO4	L4