K.S.R.M COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA

B.Tech I Sem R-18 (ECE/CSE)

Model Paper

SUB: BASIC ELECTRICAL ENGINEERING

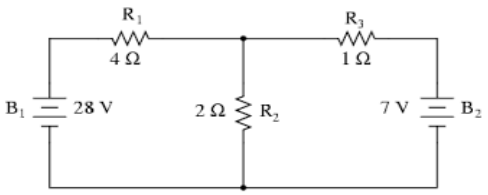
Time: 3 hours **Max Marks: 70 M**

Note: 1.Answer any **FIVE** questions by Choosing **ONE** Question from each Unit

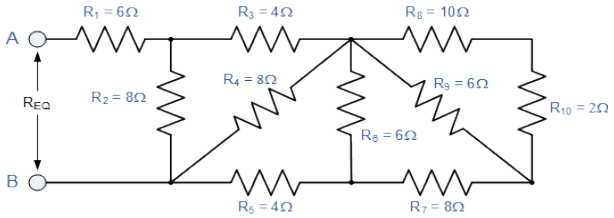
2. All questions carry Equal Marks

Unit-1

1. a)Determine Current passing through 2Ω Resistance for the given circuit shown in figure



b) Find the Resistance between A and B

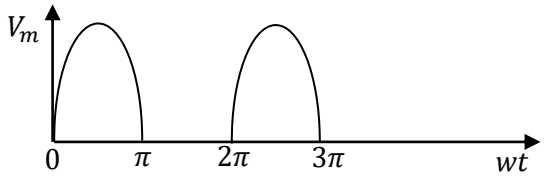


(or)

2. Derive the equation of star (*Y*) to delta(Δ) transformation.

Unit-2

3. a) Define the following terms for sinusoidal form
   a) Average value, b) RMS values, c) form factor and d) peak factor
   b) Find the form factor of the half- wave rectified sine wave



(or)

4. A given load consisting of a resistor R and a capacitor C, take a power of 4800W from 200V, 60Hz Supply mains. Given that the voltage drop across the resistor is 120V

Calculate the a) impedance, b) current, c) power factor d) resistance, e) capacitance. Write down the equations for the current and voltage.

Unit-3

5. a) Explain the working principle and constructional details of DC Generator With a neat Sketch.
   b) Explain the OCC of generator and Critical speed & Critical Resistance.

(or)

6. a) Write about different types of DC motor.
   b) Derive the Torque equation of DC Motor.

Unit-4

7. a) explain the construction and working principal of single phase transformer
   b) Derive the EMF equation of single phase transformer

(or)

8. a) Explain Construction and working principle of 3-φ Induction motor with a neat Sketch i) Squirrel cage ii) Slip ring
   b)The power input to the rotor of a 3-φ,50Hz,6-Pole IM is 80KW, the Rotor EMF makes 120 complete alternations per minute. Find a) Slip b) Motor Speed

Unit-5

9. Write a short note on switch fuse unit (SFU) and miniature circuit breaker

(or)

10. Explain about different types of cables and significance of Earthing

K.S.R.M. COLLEGE OF ENGINEERING (Autonomous), KADAPA.

B.Tech I Sem (R18) Model Question paper

Mathematics – I

(Common to All Branches)

Time: 3 Hrs. **Max Marks : 70**

Note : Answer any **FIVE** questions by choosing one from each unit.
All questions carry equal marks.

UNIT - I

1. a) Determine the rank of the following matrix. (7M)

$$A = \begin{bmatrix} 2 & -1 & 3 & 4 \\ 0 & 3 & 4 & 1 \\ 2 & 3 & 7 & 5 \\ 2 & 5 & 11 & 6 \end{bmatrix}$$

b) Discuss for what values of λ *and* μ the simultaneous equations $x + y + z = 6, x + 2y + 3z = 10,\ x + 2y + \lambda z = \mu$, have (i) no solution (ii) a unique solution (iii) an infinite number of solutions. (7M)

(OR)

2. Verify Cayley-Hamilton theorem for the matrix $A = \begin{bmatrix} 2 & -1 & 1 \\ -1 & 2 & -1 \\ 1 & -1 & 2 \end{bmatrix}$ and find its inverse.

(14 M)

UNIT – II

3. Test for the convergence of the series

(i) $\frac{1}{2\sqrt{1}} + \frac{x^2}{3\sqrt{2}} + \frac{x^4}{4\sqrt{3}} + - - - - \infty$ (7M)

(ii) $\frac{1}{2} + \frac{2}{3}x + \left(\frac{3}{4}\right)^2 x^2 + \left(\frac{4}{5}\right)^3 x^3 + \ - - - - - \infty \quad (x > 0)$ (7M)

(OR)

4. (a) Discuss the convergence of the series $\frac{2}{1^p} + \frac{3}{2^p} + \frac{4}{3^p} + \frac{5}{4^p} + \ - - - - \infty$ (7M)

(b) State the values of x for the which the following series convergent:

$$x - \frac{x^2}{2} + \frac{x^3}{3} - \frac{x^4}{4} + \ - - - \infty$$ (7M)

UNIT – III

5. a) Prove that $\log(1 + e^x) = \log 2 + \frac{x}{2} + \frac{x^2}{8} - \frac{x^4}{192} + \cdots$ (7M)

b) A window has the form of a rectangle surmounted by a semi-circle. If the perimeter is 40ft, find its dimensions so that the greatest amount of light may be admitted. (7M)

(OR)

6. a) Find the coordinates of the centre of curvature at any point of the parabola $y^2 = 4ax$. (7M)

b) Show that the radius of curvature at any point of the cardioid $r = a(1 - \cos\theta)$ varies as $\sqrt{r}$. (7M)

UNIT – IV

7. a) If $u = x^2 - y^2,\ v = 2xy\ and\ x = rcos\ \theta, y = r\sin\theta,$ find $\frac{\partial(u,v)}{\partial(r,\theta)}$ (7M)

   b) Show that the rectangular solid of maximum volume that can be inscribed in a sphere is a cube. (7M)

(OR)

8. In a plane triangle, find the maximum value of $\cos A\ CosB\ Cos\ C$. (14M)

UNIT – V

9. Show that $\beta(m,n) = \frac{\Gamma(m)\Gamma(n)}{\Gamma(m+n)}$. (14M)

(OR)

10. a) Find $f(x) = x^2$ as half range cosine series in $(0,\pi)$ (7M)

    b) Expand $f(x) = \begin{cases} \frac{1}{4} - x, if\ 0 < x < \frac{1}{2} \\ x - \frac{3}{4}, if\ \frac{1}{2} < x < 1 \end{cases}$ as the Fourier of sine terms. (7M)

K.S.R.M. COLLEGE OF ENGINEERING:: KADAPA

(Autonomous)

B.Tech I Sem (R18 - UG) Model Question Paper

(2018-2019)

Sub: Engineering Physics

Time: 3 hrs. (Common to CSE) **Max. Marks: 70**

Answer any *FIVE* questions choosing *one* question from each unit.

UNIT – I

1 a. Explain the interference of light due to thin films by reflection? 10M

b. In a Newton's rings experiment, the diameter of the 5^{th} ring is 0.30cm and 15^{th} ring is 0.62cm. Find the diameter of the 25^{th} ring? 4M

(or)

2 a. Describe Fraunhofer diffraction due to N slits? 14M

Unit-II

3 a. Explain the characteristics of laser? 6M

b. Derive the relation between various Einstein's coefficients? 8M

(or)

4. a. Explain the construction and working of Nd-YAG Laser? 10M

b. Write any eight applications of Lasers? 4M

Unit-III

5. Describe Kronig-Penny model to understand the behavior of electrons in a varying periodic potential field of a crystal? 14 M

(or)

6. a. Define effective mass and derive the expression for effective mass? 10M

b. Describe the types of electronic materials? 4M

Unit-IV

7 a. Define Intrinsic and Extrinsic semiconductors. Determine the conductivity of intrinsic semiconductors? 10M

b. Describe the dependence of Fermi level on temperature? 4M

(or)

8 a. Derive the expression for charge density due to drift and diffusion processes? 10M

b. Find the diffusion co-efficient of electron in 'si' at 300K. If μ_e is $0.19 m^2/V.sec$? 4M

Unit-V

9 a. Write the properties of Nanomaterials? 6M

b. Describe the synthesis of nanomaterials by Ball-Milling method? 8M

(or)

10 a. Describe the synthesis of nanomaterials by sol-gel method? 10M

b. Mention the eight applications of nanomaterials? 4M

K.S.R.M.COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA

I B.TECH I SEM (R18) DEGREE EXAMINATION SUB:

(1805204) Programming for Problem Solving

Model Question Paper

Time: 3Hours (Common to CSE and ECE) Max.Marks:70

Note: Answer any **FIVE** questions choosing **ONE** question from each unit.
All questions carry **Equal** marks.

UNIT-I

1. a) Explain the process of software development life cycle in detail. 7M
   b) What are formatted input and output functions available in c? Explain with suitable C programs. 7M

OR

2. a) What is a variable? Explain rules for writing variables in C? 7M
   b) Explain various steps involved in creating and running a C program and illustrate it with help of a diagram. 7M

UNIT-II

3. a) Explain the different types of operators available in C 7M
   b) Explain syntax of **for loop**. Write a C program to find whether a given number is prime number or not using for loop. 7M

OR

4. a) Explain the syntax of **while loop**. Write a C program to find sum of individual digits of a given number using while loop. 7M

   b) Explain the syntax of **if - else statement**. Write a C program to find whether a given number is even or odd. 7M

UNIT-III

5. a) Define array. Explain declaration and initialization of one dimensional arrays with an example. 7M
   b) Write a C program to sort array elements in ascending order using bubble sort technique. 7M

OR

6. a) Define String. Write a C program to find given string is palindrome or not without using string handling functions. 7M
   b) Write a C program to check whether the entered character is vowel or not. 7M

UNIT-IV

7. a) Define function. Explain the following storage classes used in C with the help of examples.
      i. static ii. extern 7M
   b) Define pointer? Explain declaration and initialization of a pointer with an example. 7M

Subject Code: 1823202 /R18

K.S.R.M COLLEGE OF ENGINEERING, KADAPA
(AUTONOMOUS)
MODEL QUESTION PAPER
FOUR YEAR B. TECH DEGREE EXAMINATIONS
I B.TECH II SEMESTER REGULAR EXAMINATION
SUB: ENGINEERING CHEMISTRY
(ECE & CSE)

Time : 3hrs **Max marks :70**

Answer any Five questions choosing one question from each unit.

UNIT-I

1. (a) Write notes on particle in one dimensional box.
(b) Explain crystal field theory and write notes on crystal field splitting in octahedral complexes.

Or

2. (a) Write short notes on LCAO method and explain with a simple example.
(b) Define doping and explain role of doping in silicon.

UNIT-II

3. (a) Write short notes on orbital energies of atoms.
(b) Explain in detail on electronic configuration.

Or

4. (a) Explain factors influencing Ionisation potential and Electronegativity.
(b) Explain hard soft acids & bases.

UNIT-III

5. (a) Define cell potential and derive Nernst equation.
(b) Write short notes on Boiler troubles.

Or

6. (a) Define corrosion and explain wet corrosion.
(b) Write short notes on (i) Ionic interactions (ii) Critical phenomenon.

UNIT-IV

7. (a) Define spectroscopy and explain the selection rules in spectroscopy.
(b) Write short notes on Fluorescence and its applications.

Or

8. Explain vibrational and rotational spectra of diatomic molecules.

UNIT-V

9. (a) Write short notes on structural isomers and stereoisomers.
(b) Explain Baeyer-villiger reaction.

Or

10. (a) Write short notes on Enantiomers and diasteomers.
(b) Explain addition reactions involving C=O (Grignard reagent).

K.S.R.M. COLLEGE OF ENGINEERING (Autonomous), KADAPA.

B.Tech II Sem (R18) Model Question paper APRIL/MAY- 2019

ENGLISH - I

(Common to E.C.E & C.S.E)

Time: 3 Hrs. **Max Marks : 70**

Note: Answer any **FIVE** questions. **All** questions carry equal marks.

I.Correct any <u>FOURTEEN</u> of the following sentences if necessary **14x1=14**

(1) He has two sister-in-laws
(2) Your service to the society is greater than me
(3) A.P.J. Abdul Kalam is one of the most greatest philanthropists
(4) She is one of those who likes classical dance.
(5) Ten projects were accepted and one rejected.
(6) He behaved cowardly before his opponent.
(7) He is always for his boss to get promotion.
(8) He worked hard and failed.
(9) He returned the book back to me.
(10) You worked hard, Isn't it?
(11) If you ask me I would oblige
(12) I am going to school everyday
(13) The teacher teached me a lesson
(14) One of my book has been stolen.
(15) South Indians prefer coffee than tea
(16) I have not read the book from 2008
(17) She is my cousin sister.

II.(A) What is word formation ? Discuss various types of word formation ?**1x7=7**

(B) i). **Give antonyms of the following.** **3x1=3**

a) Creator b) important c) adversity

ii)**. Give synonyms of the following** **4x1=4**

a) Peace b) achieve c) abandon d) faith

III. A) Draft a dialogue between a student and a teacher about improving communication skills. **1x7=7**

B) Give the meaning of the idioms and phrases and use them in sentences of your own. **1x7=7**

i) crocodile tears ii) give up iii) a snake in the grassiv) to break the ice

v) make up vi) die of vii) tooth and nail

IV. A) 1)Make five meaningful sentences on the following pattern. **1x5= 5**

Subject +	**Verb +**	**Object +**	**To infinitive**
He	helped	me	to push the car

2)Punctuate the following. **2M**

in the words of murphys law anything that can go wrong will become wrong

B. List out the principles of paragraph writing ? **7M**

K.S.R.M. COLLEGE OF ENGINEERING (Autonomous), KADAPA.

B.Tech II Sem (R18) Model Question paper

Mathematics – II

(Common to All Branches)

Time: 3 Hrs. **Max Marks : 70**

Note : Answer any **FIVE** questions by choosing one from each unit.
All questions carry equal marks.

UNIT - I

1. a) Solve $(1+y^2)\,dx = (tan^{-1}y - x)\,dy$ (7M)

b) Solve $(x^2y - 2xy^2)\,dx - (x^3 - 3x^2y)\,dy = 0$ (7 M)

(OR)

2. A body originally at $80^{\circ}C$ cools down to 60^0 c in 20 minutes, the temperature of the air being 40^0 c. What will be the temperature of the body after 40 minutes from the original? (14M)

UNIT – II

3. Solve $(D-2)^2y = 8(x^2 + e^{2x} + \sin 2x)$. (14 M)

(OR)

4. Solve $y^{||} - 2y^{|} + y = e^x\, logx$ by the method of variation of parameters. (14M)

UNIT – III

5. (a) Evaluate $L\left\{\frac{1-e^t}{t}\right\}$ (7M)

(b) Find the Laplace transform of the function $f(t) = \begin{cases} Esinwt, & 0 < t < \frac{\pi}{w} \\ 0 & ,\frac{\pi}{w} < t < \frac{2\pi}{w} \end{cases}$ (7M)

(OR)

6. Solve $\frac{d^2x}{dt^2} + 9x = \cos 2t$, if $x(0) = 1, x(\pi/2) = -1$ by using Laplace Transforms Method. (14M)

UNIT – IV

7. Change the order of integration in $I = \int_0^1 \int_{x^2}^{2-x} xy\, dx\, dy$ and hence evaluate the same. (14M)

(OR)

8. Evaluate $\int_1^e \int_1^{logy} \int_1^{e^x} \log z\; dzdxdy.$ (14M)

UNIT – V

9. (a) Find a unit vector normal to the surface $xy^3z^2 = 4$ at the point $(-1,-1,2)$. (7M)

(b) Show that $div(gradr^n) = n(n+1)r^{n-2}$. (7M)

(OR)

10. Verify the Green's theorem for $\int_c [(xy+y^2)dx + x^2dy]$ where c is bounded by $y = x$ and $y = x^2$. (14M)

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA

Model Question Paper

(1805306) PYTHON PROGRAMMING

B.Tech. III Semester (CSE) (R18) Degree Examinations

Time: 3 hrs **Max. Marks**

Note: Answer any FIVE questions choosing one question from each unit

All questions carry Equal Marks

UNIT-I

1.a) Briefly explain salient features of python. (7M)

b) Explain different data types in python. (7M)

(OR)

2. a) Explain input and output statements in python. (7M)

b) Explain the operator precedence of arithmetic operators in python. (7M)

UNIT-II

3. a) Write a python program to find Sum of digits of given number using while loop. (7M)

b) Define an array. Explain indexing and slicing operations on arrays with suitable examples. (7M)

(OR)

4.a) Write a python program to design arithmetic calculator based on user choice like

1. Addition 2. Subtraction 3. Multiplication 4. Division (7M)

b) Explain break, continue and pass statements with suitable python programs. (7M)

UNIT-III

5. a) Define Function. Explain different types of arguments used on functions through suitable programs. (8 M)

b) Write a python program to find the factorial of given number with and without using recursion. (6 M)

(OR)

6. a) Explain how to return multiple values from a function through suitable python program. (9 M)

b) Explain local and global variables in python. (5 M)

UNIT-IV

7. a) Define a list. Explain basic methods to process lists with suitable examples. (7M)

b) What is difference between list and tuple? (7M)

(OR)

8. a) What is Dictionary? Perform at least five operations on the following dictionary dict={'a':10,'b':20,'c':30} (7 M)

b) What are the different types of files in python? Write a python program to write some content in to the file and read, display contents in the file. (7 M)

KSRM COLLEGE OF ENGINEERING, KADAPA
(AUTONOMOUS)
B. TECH., III SEM CSE (R18)
SUB: BASICS OF ELECTRONICS ENGINEERING
MODEL PAPER

TIME: 3HRS **Max. Marks: 70**

Note: Answer any ***five*** of the following
Choosing ***one*** from each unit

UNIT-I

1.(a)	Explain the operation of a PN junction diode under forward bias condition.	7M
(b)	Explain the operation of a bridge full wave rectifier. Also draw input and output waveforms.	7M
	(OR)	
2.(a)	Explain the operation of a half wave rectifier with the help of circuit diagram.	7M
(b)	Write a short note on junction breakdown mechanisms.	7M

UNIT-II

3.(a)	Explain the operation of an npn transistor.	7M
(b)	Draw the circuit of a BJT in CB configuration and explain the operation. Also draw input and output characteristics curves.	7M
	(OR)	
4.(a)	Explain the operation of an n-channel JFET.	7M
(b)	Explain the operation of a BJT connected in CE configuration and explain the operation.	7M

UNIT-III

5.(a)	Analyze the effect of negative feedback in an amplifier circuit.	7M
(b)	Draw the circuit of a Colpitt's oscillator and explain its operation.	7M
	(OR)	
6.(a)	Classify the feedback circuits and draw the block diagrams.	7M
(b)	Explain the operation of an RC phase shift oscillator.	7M

UNIT-IV

7.(a)	Draw the architecture of 8086 processor and explain.	7M
(b)	Explain minimum mode of 8086.	7M
	(OR)	
8.(a)	Draw the structure of flag register and explain about each flag.	7M
(b)	Explain maximum mode of 8086.	7M

UNIT-V

9.(a)	Draw the architecture of 8051 and explain.	7M
(b)	Write about 8051 interrupts.	7M
	(OR)	
10.(a)	Draw the architecture of 8096 and explain.	7M
(b)	Write about the features of ARM.	7M

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA
Model Question Paper
(1805303) DATASTRUCTURES
B.Tech. III Semester (CSE) (R18) Degree Examinations

Time: 3 hrs. **Max. Marks: 70**

Note: Answer any FIVE questions choosing one question from each unit
All questions carry Equal Marks

UNIT-I

1. a) Differentiate linear and non-linear data structures. (7M)
   b) Write short notes on doubly linked list. (7M)

(OR)

2. What is linked list? Explain various operations of linked list. (14M)

UNIT-II

3. What is Stack? Write and explain the algorithms of Push and Pop operations. (14M)

(OR)

4. Explain about the following.
   a) Array & Linked representations of a Queue (7M)
   b) Circular Queues (7M)

UNIT-III

5. a) What is Binary Tree? Explainthe properties of Binary Tree. (8M)
   b) Construct the Binary Tree with the following inorder and preorder traversals. (6M)

   Inorder: EACKFHDBG Preorder: FAEKCDHGB

(OR)

6. a) What is BST? Explain insertion and deletion operations with suitable examples. (10M)
   b) Write short notes on Leftist Trees. (4M)

UNIT-IV

7. Write short notes about the following.
   a) AVL Tree (7M)
   b) Red-Black Tree (7M)

(OR)

8. Briefly explain about Breadth First Search (BFS) with suitable example. (14M)

UNIT-V

9. a) Write an algorithm for Bubble sort and explain with suitable example. (7M)
   b) Write an algorithm for Binary search and explain with an example. (7M)

(OR)

10). a) Explain about various hash functions with suitable example. (7M)
   b) Compare B trees with B+ trees. (7M)

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA
Model Question Paper
(1805304) DISCRETE MATHEMATICS
B.Tech. III Semester (CSE) (R18) Degree Examinations

Time: 3 hrs. **Max. Marks: 70**

Note: - Answer any FIVE questions choosing ONE question from each unit.
All questions carry Equal marks.

UNIT – I

1. a) Define Tautology and Contradiction? Determine given statement is tautology or contradiction $((P\rightarrow(Q\rightarrow R))\rightarrow((P\rightarrow Q)\rightarrow(P\rightarrow R))$ (7M)

   b) Show that $(\sim P\wedge(\sim Q\wedge R))\vee(Q\wedge R)\vee(P\wedge R)\Leftrightarrow R$. without using truth tables (7M)

(OR)

2. a) Define a Principal Disjunctive Normal Form. Obtain the Principal Disjunctive Normal Form of $(P\wedge Q)\vee(\sim P\wedge R)\vee(Q\wedge R)$ (7M)

   b) Show that R (P V Q) is a valid conclusion from the premises P V Q, $Q\rightarrow R$, $P\rightarrow M$ and $\sim M$ (7M)

UNIT-II

3. a) What is a binary relation? Explain the properties of binary relation? (7M)
   b) Define Equivalence Relation. Let X={1,2,3,4,5,6,7}and R R= {(x,y) / x-y is divisible by 3}show that R is equivalence relation and draw the graph of R . (7M)

(OR)

4 a) Define a partially ordered set. Draw the Hasse diagram (X, ≤) where X is the set of positive divisors of 45 and the relation ≤ be such that x≤y if x divides y. (7M)

   b) Define compositio. Let relations R={(1,2) (3,4), (2,2) } S ={ (4,2) ,(2,5) ,(3,1), (1,3) }
   find RoR , RoS , SoR, Ro(SoR), (RoS)oR (7M)

UNIT-III

5. a) Explain binomial and Multinomial theorem (7M)
   b) Determine the coefficient of x^3y^7 in $(x+y)^{10}$ and in $(2x-9y)^{10}$ (7M)

(OR)

6. a) There are 6 men and 5 women in a group. In how many ways we can choose 3 men and 2 women from the group? (7M)
   b) In how many ways can the letters of the word 'READER' be arranged so that the consonants occupy only the even positions? (7M)

UNIT-IV

7. What is Generating function? Give an Example to calculate coefficients of generating function? (14 M)

(OR)

8. a) Explain Recurrence Relations with an Example? (4 M)
   b) Explain with an example solving recurrence relations by substitution and generating functions (10 M)

UNIT-V

9. a) Show that number of odd degree vertices in a simple graph is even. (7M)
   b) Define terms graph, planar graphs, sub graphs and multi graphs. Explain them with examples. (7M)

(OR)

10. a) Define isomorphism of graphs. Explain with example. (7M)
    b) Explain BFS algorithm with example (7M)

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA
Model Question Paper
(1805305) DIGITAL LOGIC DESIGN
B.Tech. III Semester (CSE) (R18) Degree Examinations

Time:3 hours **Max.marks: 70**

Note: Answer all five Unit.s All questions carry equal marks. 5*14=70

UNIT-I

1. a) Show how the bases are equal.
   41 / 3 = 13
   b) Interpret the following subtraction using 2's complement.
   i) $(11111)_2 - (10101)_2$ ii) $(1101)_2 - (1110)_2$
   c) Identify minimum number of literals for the following Boolean functions using Boolean Algebra theorems and properties
   i) xy + x(wz + wz') ii) A'B (D' + C'D) + B(A+A'CD)

(OR)

2. Explain the following
   i) BCD codes ii) Gray code iii) Excess – 3 code
   iv)Error Detection and Correction codes v)ASCII code

UNIT- II

3. a) Reduce the following Boolean function using K-map.
   $F(A,B,C,D) = \sum(0,2,3,8,9,10,12,15)$
   b) Explain don't – care condition of a digital system in detail with example.

(OR)

4. Simplify the following Boolean expression and implement them with two levels of NAND gate circuit.
   $F(A,B,C,D,E) = \sum m(0,2,4,6,9,13,21,23,24,29,31)$

UNIT-III

5. a) Explain about half adder and full adder in detail.
   b) With a neat sketch explain BCD to Excess-3 Code converter.

(OR)

6. a) Explain the significance of multiplexer. Implement the following Boolean function using 4X1 MUX.
   $F(A,B,C,D) = \sum m(0,1,2,4,6,9,12,14)$
   b) Define an encoder. Design octal to binary encoder.

UNIT-IV

7. a) Write the differences between Latches and FlipFlops.
   b) Define FlipFlop and explain the following.
   i) RS FlipFlop ii) JK FlipFlop iii) D FlipFlop

(OR)

8. What is sequential circuit? Explain about sate reduction and state assignment with an example.

UNIT-V

9. a) Define register and explain about Universal shift register.
   b) In detail explain about BCD Ripple counter.

(OR)

10. Implement the following two Boolean functions with a PLA.
    $F_1(A,B,C)=\sum (0,1,2,4)$
    $F_2 (A,B,C)=\sum (0,5,6,7)$

K.S.R.M.COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA
B.Tech. IV Semester (CSE) (R18) Degree Examinations
(1805404) OPERATING SYSTEMS

Max. Time: 3Hrs **Max.Marks: 30**

Note: Answer any **FIVE** questions choosing ONE question from each unit.
All questions carry **Equal** marks.

UNIT I

1. a) Define operating system. Explain the various functions of operating systems. (7M)
   b) What is system program? List and explain the various categories of system programs. (7M)

(OR)

2. a) List and explain the various services of operating system. (7M)
   b) Describe any two structures of operating systems. (7M)

UNIT II

3. a) What is process? Explain the various states associated with process and explain the process state diagram. (7M)
   b) What is critical section? Write Peterson's solution for critical section problem.

(OR)

4. Explain FCFS and Round Robin scheduling algorithms. (14M)
   Find the average waiting time and average turn around time for a process, if the following processes are scheduling using FCFS and round robin scheduling algorithms. Time quantum is 1 msec.

Process	**burst time**
P1	10
P2	1
P3	2
P4	1
P5	5

UNIT III

5. Explain the following contiguous memory allocation methods with examples (14 M)
   (i) Multiprogramming with Fixed Partitions (MFT)
   (ii) Multiprogramming with variable sized partitions. (MVT)

(OR)

6. Explain FIFO, OPR and LRU page replacement algorithms. (14M)
   Consider page reference string
   7, 0, 1, 2, 0, 3, 0, 4, 2, 3, 0, 3, 2, 1, 2, 0, 1, 7, 0, 1
   and 3 frames in main memory. Find the number of page faults for the page replacement algorithms FIFO, OPR and LRU.

UNIT IV

7. (a) Define deadlock. List and explain the four conditions for occurring a deadlock in the system. (4M)
   (b) Explain the deadlock avoidance with the help of Banker's algorithm. (10M)

(OR)

8. (a) Explain different file accessing methods. (7M)
   (b) What is a directory? Explain different directory structures. (7M)

UNIT V

9. (a) Explain about access matrix. (7M)
   (b) Explain any two techniques for implementing access matrix. (7M)

(OR)

10. What is user authentication? Explain the various approaches for user authentication. (14M)

MODEL QUESTION PAPER

Q.P. Code: 1823401

K.S.R.M. COLLEGE OF ENGINEERING(AUTONOMOUS) :: KADAPA

B.TECH – IV SEMESTER(R-18) REGULAR EXAMINATION OF APRIL/MAY 2020
SUB: BIOLOGY FOR ENGINEERS
(Common to CSE & ECE)

Time: 3:00 Hours **Max.Marks:70**

ANSWER ONE QUESTION FROM EACH UNIT
ALL QUESTIONS CARRY EQUAL MARKS

		Marks	CO	BL
	UNIT –I			
a.	Discuss the structure of a cell in detail	7	**CO2**	**L2**
b.	Illustrate the different types of plant tissues	7	**CO3**	**L3**
	(OR)			
a.	Describe the process of cell cycle	7	**CO2**	**L2**
b.	What are the parts and functions of animal cell? Explain.	7	**CO3**	**L3**
	UNIT –II			
a.	What are carbohydrates? Discuss its broad classification.	7	**CO4**	**L4**
b.	Explain the double helix structure of DNA with a neat diagram.	7	**CO4**	**L4**
	(OR)			
a.	State the structure of proteins.	7	**CO4**	**L2**
b.	Define enzymes and state its applications in industry.	7	**CO4**	**L2**
	UNIT –III			
a.	Elaborate the different classes of nutrients and their deficiency diseases.	7	**CO5**	**L3**
b.	Distinguish between aerobic and anaerobic respiration**.**	7	**CO2**	**L2**
	(OR)			
a.	Discuss about the human physiology of excretory system.	7	**CO3**	**L3**
b.	Examine the steps involved in physiology of human digestive system.	7	**CO2**	**L5**
	UNIT –IV			
a.	Describe the structure of prokaryotic gene.	7	**CO3**	**L3**
b.	Outline the recombinant DNA technology.	7	**CO4**	**L4**
	(OR)			
a.	Explain the process of replication of DNA	7	**CO4**	**L4**
b.	Describe the steps involved in the process of transcription in eukaryotes	7	**CO3**	**L3**
	UNIT –V			
a.	What are the different types of antibodies? Discuss its role in immunity.	7	**CO4**	**L4**
b.	State the advantages and disadvantages of transgenic plants and animals.	7	**CO4**	**L5**
	(OR)			
a.	'Cloning in plants, animals and microbes is a boon or curse?' Comment on this statement.	7	**CO4**	**L4**
b.	Explain the basic principles and applications of biosensors.	7	**CO4**	**L3**

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA
B.Tech. IV Semester (CSE) (R18) Degree Examinations
(1805403) COMPUTER ORGANIZATION
Model Question Paper

Max.Time: 3Hrs **Max.Marks:70**

Note: Answer One Question from Each Unit
All Questions Carry Equal Marks

UNIT-I

1. a) Explain about various functional units of a computer with its block diagram. (7M)
   b) Write short notes on the following
   i) Basic performance equation (3M) ii) Computer Types (4M)

(OR)

2. a) Explain about Fixed point representation in detail. (7M)
   b) Discuss about Floating point addition and subtraction with suitable example.(7M)

UNIT-II

3. a) Design a 4-bit adder/subtractor using full adder and explain its function. (7M)
   b) Discuss about shift micro operations. (7M)

(OR)

4. Explain in detail about arithmetic logic shift unit with its neat diagram. (14M)

UNIT-III

5. a) Discuss various Memory Reference Instructions. (7M)
   b) What is addressing mode? Briefly explain various addressing modes. (7M)

(OR)

6. a) Explain the design of Hardwired control unit. (7M)
   b) Draw the flowchart for Restoring division algorithm and explain with example. (7M)

UNIT-IV

7. a) Discuss about parallel processing. (7M)
   b) What is pipelining? Discuss about arithmetic pipeline. (7M)

(OR)

8. What is "Cache Memory"? Explain about various mapping procedures. (14M)

UNIT-V

9. Discuss the following.
   i) Handshaking (6M) ii) DMA Transfer (8M)

(OR)

10. Discuss about various interconnection structures in detail. (14M)

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA

B.Tech. IV Semester (CSE) (R18) Degree Examinations
(1805405) DESIGN AND ANALYSIS OF ALGORITHMS
Model Question Paper

Max.Time: 3Hrs **Max.Marks:70**

Note: Answer One Question from Each Unit
All Questions Carry Equal Marks

UNIT-I

1 a) Define Algorithm and Using Frequency count method, analyze the time complexity to find factorial of given number. (7M)
b). What is pseudo-code? Explain with an example. (7M)

(OR)

2. a) Explain in detail about Asymptotic Notations. (7M)
b) Explain Weighted Union and Collapsing Find algorithms with example. (7M)

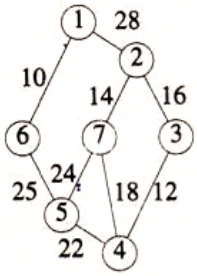
UNIT-II

3. a) Write Quick Sort algorithm and analyze its Space and Time complexity. (7M)

b) Discuss in detail about Strassen's Matrix Multiplication. (7M)

(OR)

4. Formulate greedy based prim's algorithm to generate shortest path and explain with the following graph. (14M)



UNIT-III

5. Draw an Optimal Binary Search Tree for n=4 identifiers (a1,a2,a3,a4) = (do,if, read, while)
P(1:4)=(3,3,1,1) and Q(0:4)=(2,3,1,1,1). (14M)

(OR)

6. Define travelling sales person problem and discuss optimal solution of the following. (14M)

$$C = \begin{bmatrix} 0 & 10 & 15 & 20 \\ 5 & 0 & 9 & 10 \\ 6 & 13 & 0 & 12 \\ 8 & 8 & 9 & 0 \end{bmatrix}$$

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA
B.Tech. IV Semester (CSE) (R18) Degree Examinations
(1805407) FORMAL LANGUAGES AND AUTOMATA THEORY
Model Question Paper

Max.Time: 3Hrs **Max.Marks:70**

Note: Answer One Question from Each Unit
All Questions Carry Equal Marks

UNIT-I

1. a) Define NFA ? Give state diagram of NFA with specified number of states recognizing the given language {w/w ends with 00} with three states over the input {0,1}. (7M)
   b) Explain the procedure of minimization of Finite state machine with example. (7M)

(OR)

2. a) Elaborate the procedure to convert NFA to DFA with suitable example. (7M)
   b) What are the differences between NFA and DFA? (7M)

UNIT-II

3. a) Explain the procedure for converting Regular Expression to Finite Automata with suitable example. (7M)
   b) Construct NFA for the regular expression (a+b)*aa(b+a)*. (7M)

(OR)

4. a) State and Prove Arden's theorem. (7M)
   b) Construct NFA for regular expression (11+0)*(00+1)* (7M)

UNIT-III

5. Define the following
   a) I) Left most derivation ii)Right most derivation
   iii) Derivation tree iv) Ambiguous grammar (8M)

   b) Write the procedure for Eliminating Unit productions in the given grammar. (6M)

(OR)

6. Explain the procedure of converting the given CFG to Greibach Norma l Form(GNF) with suitable example. (10M)

UNIT-IV

7. a) Define PDA. Design a PDA for equal number of a's and b's. (7M)
   b) Convert the following CFG to a PDA.
   $S \rightarrow aAA$, $S \rightarrow aS/bS/a$ (7M)

(OR)

8. a) Design a Pushdown Automata which accepts L={wcw^r/wE(0+1)*. (7M)
   b) Explain about Two Stack PDA. (7M)

UNIT-V

9. a) Give the formal definition of TM? What are the different types of TM's? Explain. (7M)

   b) Explain about undecidable problem. (7M)

(OR)

10. a) Design a Turing Machine to find whether the given number is prime or not. (7M)

    b) Explain Church's Hypothesis with suitable example. (7M)

K.S.R.M.COLLEGE OF ENGINEERING *(Autonomous)*, KADAPA

B.Tech., IV Semester (R 18) Model Paper

Subject**: PROBABILITY AND STATISTICS**

(CSE Branch)

Time: **3 Hours** Max.Marks:**70**

Note: Answer any **FIVE** questions by choosing **ONE** from each unit.

All questions carry equal marks.

Unit-I

1. A random variable X has the following probability function

$X = x$	0	1	2	3	4	5	6	7
$P(X = x)$	0	k	2k	2k	3k	k^2	$2k^2$	$7k^2$+k

Determine $(i)\ k\ (ii)\ P(X < 6)\ (iii)\ P(X \geq 6)\ (iv)\ P(0 < X < 5)\ (v) If\ P(X \leq k) > \frac{1}{2}$, find the minimum of k (vi) mean (vii) variance. (14M)

(OR)

2. (a) If X is a continuous random variable and k is a constant then prove that var (X+k) = var (X). (7M)

(b) Probability density function of a random variable X is

$f(x) = \begin{cases} \frac{1}{2} sinx, for\ 0 \leq x \leq \pi \\ 0, otherwise \end{cases}$. Find the mean and median of the distribution. (7M)

Unit-II

3. (a) Assume that 50% of all engineering students are good in Mathematics. Determine the probabilities that among 18 engineering students (i) atleast 10 (ii) atmost 8 (iii) atleast 2 and atmost 9 are good in Mathematics. (7M)

(b) Fit a Poisson distribution for the following distribution:

x	0	1	2	3	4
f	122	60	15	2	1

(7M)

(OR)

4. (a) 4 buses arrive at a specified stop at 15 minute intervals starting at 7 a.m. That is, they arrive at 7.00, 7.15, 7.30, 7.45 a.m. and so on. If a passenger arrives at the stop at a time that is uniformly distributed between 7.00 and 7.30 a.m., find the probability that he waits (i) less than 5 minutes for a bus (ii) more than 10 minutes for a bus. (7M)

(b) In a normal distribution, 31% of the items are under 45 and 8% are over 64. Find the mean and standard deviation of the distribution. (7M)

Unit-III

5. (a) The mean breaking strength of the cables supplied by a manufacturer is 1800 with a S.D of 100. By a new technique in the manufacturing process, it is claimed that the breaking strength of the cables have increased. In order to test this claim, a sample of 50 cables is tested. It is found that the mean breaking strength is 1850.Can we support that the claim at 1% level of significance. (7M)

(b) Random samples of 400 men and 600 women were asked whether they would like to have a fly over near their residence. 200 men and 325 women were in favour of the proposal. Test the hypothesis that proportions of men and women in favour of the proposal are same at 5% level. (7M)

(OR)

6. (a) The average marks scored by 32 boys are 72 with a standard deviation of 8, while that for 36 girls is 70 with a standard deviation of 6. Test at 1% LOS whether the boys perform better than girls. (7M)

(b) In a sample of 1000 people in Karnataka 540 are rice eaters and the rest are wheat eaters. Can we assume that both rice and wheat are equally popular in this state at 1% level of significance. (7M)

Unit-IV

7. From the following data, find whether there is any significant liking in the habit of taking soft drinks among the categories of employees. (14M)

Employees / Soft Drinks	Clerks	Teachers	Officers
Pepsi	10	25	65
Thumsup	15	30	65
Fanta	50	60	30

(OR)

8. (a) Two random samples drawn from two normal populations are given below:

x	19	17	26	28	22	23	19	24	26			
y	28	32	40	37	30	35	40	28	41	45	30	36

Obtain the estimates of variance of the population and test whether the two populations have the same variance. (7M)

(b) The following data represent the biological values of protein from cow's milk and buffalo's milk at a certain level.

Cow's milk	1.82	2.02	1.88	1.61	1.81	1.54
Buffalo's milk	2.00	1.83	1.86	2.03	2.19	1.88

Examine if the average values of protein in the two samples significantly differ. (7M)

Unit-V

9. Each telephone call is consider a product and the time to answer the call indicates the quality of service. Five calls chosen at random and times recorded at a busy hour. Results for the last 10 hours shown below (in seconds).

Sample No	1	2	3	4	5	6	7	8	9	10
Mean	20	34	45	39	26	29	13	34	37	23
Range	13	9	15	5	20	17	21	11	10	10

Construct $\bar{X}$ and R charts and determine whether the product is under control. (14M)

(OR)

10. (a) An inspection of 10 samples of size 400 each from 10 lots revealed the following defective units.

Sample no	1	2	3	4	5	6	7	8	9	10
No of defective units	17	15	14	26	9	4	19	12	9	15

Calculate the control limits for the number of defective units. Plot the control limits and the observations and state whether the process is under control or not. (7M)

(b) 15 tape-recorders were examined for quality control test. The number of defects in each tape-recorder is recorded below. Draw the appropriate control chart and comment on the state of control. (7M)

Unit	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
No .of defects	2	4	3	1	1	2	5	3	6	7	3	1	4	2	1

K.S.R.M.COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA
B.Tech. IV Semester (CSE) (R18) Degree Examinations
(1805404) OPERATING SYSTEMS

Max. Time: 3Hrs **Max.Marks: 30**

Note: Answer any **FIVE** questions choosing ONE question from each unit.
All questions carry **Equal** marks.

UNIT I

1. a) Define operating system. Explain the various functions of operating systems. (7M)
   b) What is system program? List and explain the various categories of system programs. (7M)

(OR)

2. a) List and explain the various services of operating system. (7M)
   b) Describe any two structures of operating systems. (7M)

UNIT II

3. a) What is process? Explain the various states associated with process and explain the process state diagram. (7M)
   b) What is critical section? Write Peterson's solution for critical section problem.

(OR)

4. Explain FCFS and Round Robin scheduling algorithms. (14M)
   Find the average waiting time and average turn around time for a process, if the following processes are scheduling using FCFS and round robin scheduling algorithms. Time quantum is 1 msec.

Process	**burst time**
P1	10
P2	1
P3	2
P4	1
P5	5

UNIT III

5. Explain the following contiguous memory allocation methods with examples (14 M)
   (i) Multiprogramming with Fixed Partitions (MFT)
   (ii) Multiprogramming with variable sized partitions. (MVT)

(OR)

6. Explain FIFO, OPR and LRU page replacement algorithms. (14M)
   Consider page reference string
   7, 0, 1, 2, 0, 3, 0, 4, 2, 3, 0, 3, 2, 1, 2, 0, 1, 7, 0, 1
   and 3 frames in main memory. Find the number of page faults for the page replacement algorithms FIFO, OPR and LRU.

UNIT IV

7. (a) Define deadlock. List and explain the four conditions for occurring a deadlock in the system. (4M)
   (b) Explain the deadlock avoidance with the help of Banker's algorithm. (10M)

(OR)

8. (a) Explain different file accessing methods. (7M)
   (b) What is a directory? Explain different directory structures. (7M)

UNIT V

9. (a) Explain about access matrix. (7M)
   (b) Explain any two techniques for implementing access matrix. (7M)

(OR)

10. What is user authentication? Explain the various approaches for user authentication. (14M)

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA
Model Question Paper
(1805508) COMPILER DESIGN
B.Tech. V Semester (CSE) (R18) Degree Examinations

Time: 3 Hrs. **Max. Marks: 70**

Note: Answer any **FIVE** questions choosing **ONE** question from each unit.
All questions carry **Equal** marks.

UNIT-I

1. a) What is compiler? Explain different phases of compiler, showing output of each phase for example statement x=y+z*10, where x, y, and z are float variables.(10M)
   b) Write regular definitions for the tokens: identifiers and integer constants. (4M)

(OR)

2. a) Explain input buffering concept in lexical analysis phase. (7M)
   b) Write short notes on LEX tool. (7M)

UNIT-II

3. a) What is recursive descent parser? Write recursive descent parser for the following grammar:
   $E \rightarrow TE^1$ $T \rightarrow FT^1$ $F \rightarrow (E)|id$
   $E^1 \rightarrow TE^1|\varepsilon$ $T^1 \rightarrow *FT^1|\varepsilon$ (7M)
   b) By considering suitable example, explain how ambiguity in grammar can be eliminated. (7M)

(OR)

4. What is LR(1) item? Find the sets of LR(1) items for the following augmented grammar:
   $S^1 \rightarrow S$
   $S \rightarrow CC$
   $C \rightarrow cC$
   $C \rightarrow d$ (14M)

UNIT-III

5. a) Explain with example, synthesized attribute and inherited attribute. (7M)
   b) Write Syntax directed definitions for construction of syntax tree and explain it with example. (7M)

(OR)

6. a) What is type checking? Write type checking semantic rules for expressions and statements. (7M)
   b) What is structural equivalence of type expressions? Write algorithm for structural equivalence of type expressions. (7M)

UNIT-IV

7. a) What is activation record? List and explain the various fields in activation record. (4M)
   b) Explain the various data structures for implementing symbol table. (10M)

(OR)

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA

Model Question Paper

(1805501) WEB TECHNOLOGIES

B.Tech. V Semester (CSE) (R18) Degree Examinations

Time: 3 Hrs Marks: 70

Note: Answer any **FIVE** questions choosing **ONE** question from each unit.
All questions carry **Equal** marks.

UNIT I

1. a) What is a web server? 2M
   b) Mention any three web servers and explain them. 12M

OR

2. a) How to handle HTTP requests & response? Explain in detail. 10M
   b) Write a short note on client/server model. 4M

UNIT II

3. a) How can we insert a table in html? Explain in detail with suitable example. 7M
   b) Create a simple HTML page which demonstrates the use of the various types of lists. 7M

OR

4. a) What is CSS? Explain in detail about various types of style sheets. 7M
   b) Describe all the ways of creating Arrays in Java Script? 7M

UNIT III

5. a) Explain about PHP data types in detail. 7M
   b) Explain different types of operators in PHP. 7M

OR

6. a) How to define a class in PHP? Explain in detail about classes. 7M
   b) Write a PHP program that explains the use of abstract classes. 7M

UNIT IV

7. a) How to set a cookie on user computer? Explain with an example 7M
   b) What is a session? Explain briefly about sessions. 7M

OR

8. a) Explain briefly how to redirect the HTTP headers to different locations. 7M
   b) Explain briefly how to use the header ( ) function in different ways. 7M

UNIT V

9. a) Explain briefly about the POST method with example. 10M
   b) Differentiate GET and POST methods. 4M

OR

10. a) Write PHP code to connect to a MySQL Database. 6M
    b) Explain the following functions with examples. 8M
       (a) Mysql_connect () (b) mysql_close ()
       (c) mysql_query() (d) mysql_select_db().

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA
Model Question Paper
(1805502) DATABASE MANAGEMENT SYSTEMS

B.Tech. V Semester (CSE) (R18) Degree Examinations

Time: 3 Hrs. **Max. Marks: 70**

Note: Answer any **FIVE** questions choosing **ONE** question from each unit.
All questions carry **Equal** marks.

UNIT-I

1. a) Write about Database users and Administrators 7M
   b) Explain Database system architecture with a neat diagram. 7M

(OR)

2. a) Write and explain the relational operations with an example. 7M
   b) Briefly write about ER model. 7M

UNIT- II

3. a) Write about SQL Data Definition. 7M
   b) Write and explain aggregate functions with an examples. 7M

(OR)

4. a) Write about Triggers. Explain it with an example. 7M
   b) Briefly write about Tuple Relational Calculus. 7M

UNIT-III

5. a) Write about problems caused by Redundancy. 7M
   b) Write about First, Second, BCNF and Third normal forms. 7M

(OR)

6. a) What is Functional dependency? Write about Decompositions. 7M
   b) What is Multi-Valued, Join dependency? Write about Fourth and Fifth normal forms. 7M

UNIT-IV

7. Write and explain about Query Processing with a neat sketch. 14M

(OR)

8. a) What is a Transaction? Write about properties of Transaction. 7M
   b) Write about the Transaction Isolations levels. 7M

UNIT –V

9. a) Write about Two-phase locking protocol. 7M
   b) Write about Deadlock handling. 7M

(OR)

10. a) Write about Recovery algorithms. 7M
    b) Write about Remote Backup systems. 7M

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA

Model Question Paper
(1805503) COMPUTER NETWORKS
B.Tech. V Semester (CSE) (R18) Degree Examinations

Time: 3 Hrs. **Max.Marks:70**

Note: Answer any **FIVE** questions choosing **ONE** question from each unit.
All questions carry **Equal** marks.

UNIT-I

1. What is a network? Name the reference models. Explain the OSI reference model? (14M)

(OR)

2. What is Data and Signal. Write about unguided transmission media? (14M)

UNIT-II

3. a) Write about Error detection and correction techniques? (7M)
   b) Write about One bit sliding window protocol? (7M)

(OR)

4. Explain in detail about Carrier Sense multiple access protocol? (14M)

UNIT-III

5. What is routing algorithm? Explain briefly about Shortest path routing algorithm. With an example? (14M)

(OR)

6. a)What is addressing? Explain about IPV4 addressing. (10M)
   b) Write about Fragmentation? (4M)

UNIT-IV

7. Explain in detail about UDP. (14M)

(OR)

8. Explain about the elements of transport protocols? (14M)

UNIT-V

9. Write about Domain Name System? (14M)

(OR)

10. Write about E Mail? (14M)

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA
Model Question Paper
(1805504) SOFTWARE ENGINEERING
B.Tech. V Semester (CSE) (R18) Degree Examinations

Time: 3 Hrs. **Max. Marks: 70**

Note: Answer any **FIVE** questions choosing **ONE** question from each unit.
All questions carry **Equal** marks.

UNIT-I

1. a) Define Software Engineering. Write about Manager's and Practitioner's Myths. (7M)
   b) Discuss about the phases of Unified Process Model. (7M)

(OR)

2. a) Write the Characteristics of Software. (6M)
   b) Explain in-detail about Spiral Process Model. (8M)

UNIT-II

3. Explain the procedure of Eliciting the Requirements. (14 M)

(OR)

4. Explain in-detail about Requirements Engineering. (14M)

UNIT-III

5. Write about various Design Concepts that help in designing. (14M)

(OR)

6. What is Software Architecture? List and explain Architectural Styles. (14M)

UNIT-IV

7. a) Discuss the Golden rules for User Interface Design. (7 M)
   b) Explain User Interface design steps. (7 M)

(OR)

8. Discuss about various Black-box Testing Strategies in detail. (14 M)

UNIT-V

9. Write a short note on COCOMO Model. (14M)

(OR)

10. a) Write about Risk Management. (7M)
    b) Write about Metrics for Project estimation (7M)

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA
Model Question Paper
(1805507) DISTRIBUTED SYSTEMS
B.Tech. V Semester (CSE) (R18) Degree Examinations

Time: 3 Hrs. **Max. Marks: 70**

Note: Answer any **FIVE** questions choosing **ONE** question from each unit.
All questions carry **Equal** marks.

UNIT I

1. a) What are the different benefits of resource sharing? Explain about its significance? 5M
   b) Explain in detail the distributed information systems 5M

OR

2. a) Explain the layered and object-based architectures. 5M
   b) Explain with neat diagram the basic client server model. 5M

UNIT II

3. a) With neat diagram explain the concept of threads in distributed systems. 5M
   b) Write short notes on distributed servers 5M

OR

4. a) Explain the basic RPC Operation and explain the issues. 5M
   b) What are the issues in socket programming and explain how it is solved by using the message – passing interface(MPI) 5M

UNIT III

5. a) What is clock synchronization and explain Berkeley Algorithm. 5M
   b) Explain Lamport's logical clock with neat diagram 5M

OR

6. a) Write about bully algorithm and summarize how it is different from other election algorithms 5M
   b) What is Mutual Exclusion and explain the Centralized Algorithms with neat diagram. 5M

UNIT IV

7. a) Explain Sequential Consistency and Casual Consistency? 5M
   b) Write short notes on Monotonic Reads and Monotonic Writes in Client-Centric Consistency model. 5M

OR

8. a) Explain the basic mechanism for managing the replicated content 5M
   b) Explain the Primary-based Consistency protocol. 5M

UNIT V

9. a) What are the basic concepts related to processing failures 5M
   b) Explain the two forms of error recovery and also explain why receiver based message logging is generally considered better than sender based logging.5M

OR

10. a) Explain the basic reliable multicasting schemes in reliable group communication 5M
    b) Explain the Two-Phase Commit protocol in Distributed Commit 5M