1ST SEM ./COMMON TO ALL BRANCHES/ 2020(W) NEW

TH1-B Computer Application

Full Marks: 80 Time- 3 Hrs

Answer any five Questions including Q No.1& 2
Figures in the right-hand margin indicate marks

1.		Answer **All** questions	2 x 10
	a.	Define pointer in C programming language.	
	b.	What is variable in C programming language?	
	c.	What is ALU	
	d.	What do you mean by non-impact printer?	
	e.	Define compiler.	
	f.	What do you understand about protocol? Give two examples of protocol	
	g.	Define URL with example?	
	h.	Compare between file and folder.	
	i.	Define GUI .	
	j.	Define NULL character constant and NULL statement in C programming language	
2.		Answer **Any Six** Questions	6 x 5
	a.	Compare between 3rd generation and 4th generation of computers	
	b.	Give a brief description on Email.	
	c.	Draw a flow chart to add all the natural numbers from 100 to 200.	
	d.	Write about different types of computer virus.	
	e.	Discuss about system software and application software	
	f.	Explain about different types of mode of data transmission based on direction of data flow.	
	g	Define looping? Write the details about three types of basic looping used in C programming language	
3		Draw a flow chart and write a program in C to add all digits of a given number.	10
4		Define file access? Write on various types of file access methods.	10
5		Write on memory hierarchy system?	10
6		Define topology? Explain various types of topology used to form a network.	10
7		Define Operating System? Write about various types of operating system used in computer	10

3RD SEM./ IT/ CSE /2020(W)NEW

Th2- Data Structure

Full Marks: 80 Time- 3 Hrs

Answer any five Questions including Q No.1& 2
Figures in the right hand margin indicates marks

1. Answer **All** questions 2 x 10
   a. Name four data structure.
   b. What is concatenation operation in string? Give one example.
   c. Define sparse matrix. Give one example.
   d. What is Garbage collection?
   e. Define merging operation.
   f. Define Recursion.
   g. What is circular queue?
   h. Convert into Postfix
      (i) (a+b)/(c-d)
   i. Write two advantages of linked list.
   j. What is the significance of Path Matrix?

2. Answer **Any Six** Questions 6 x 5
   a. What do you mean by complexity of an Algorithm? Explain space and time complexities.
   b. Define string. Explain different string operations.
   c. What is multidimensional array? Derive an expression of addressing A[I,J] in a two dimensional array by (i)Row_Major and (ii) Column _Major order
   d. Define Stack. Write PUSH and POP algorithm.
   e. What do you mean by searching? Explain Binary searching with suitable example.
   f. Define Graph. Draw a Graph and write the Adjacency matrix.
   g How Binary tree is represented in memory? Explain tree traversal.

3 Define Sorting. Write the algorithm for Bubble sorting. Explain with a suitable example. 10

4 Define binary search tree. Explain how insertion and deletion operations takes place in a binary search tree with suitable example. 10

5 Why Linked list is needed? Write an algorithm for traversing a linked list. Explain how it is represented in memory 10

6 Define linear array. Write algorithm to inset and delete element at m^{th} location of the array. 10

7 What do you mean by Hashing? Write the different hashing techniques. Explain collision resolution techniques. 10

3RD SEM./ ETC/ CSE/ IT/ AE&I/ EIC/Mechatronics / 2020(W)NEW

Th3- DIGITAL ELECTRONICS

Full Marks: 80 Time- 3 Hrs

Answer any five Questions including Q No.1& 2
Figures in the right hand margin indicates marks

1. Answer **All** questions 2 x 10
   a. State Demorgan's theorem.
   b. Why multiplexers are referred to as data selectors?
   c. Write down the necessity of A/D and D/A converters.
   d. What is universal shift registers?
   e. Define modulus of a counter.
   f. Define the term fan In and fan Out.
   g. Define racing condition in flip-flop. How it can be avoided?
   h. Convert (10110101) from binary to gray code.
   i. Perform 2's complement subtraction of 1000011-1010111.
   j. What is K-map?

2. Answer **Any Six** Questions 6 x 5
   a. Discuss 1:4 De-multiplexer with circuit, truth table and implementation by gates.
   b. Show the diagram of a clocked SR flip-flop. Explain its working with a functional table.
   c. Obtain the real minimal expression for f = $\sum m(1,2,4,6,7)$ and implement it using universal gates.
   d. Explain the working of SISO and PISO register with the help of suitable logic diagram.
   e. Simplify the Boolean expression: Y=AB+A(B+C)+B(B+C) and draw the logic circuit for the simplified function.
   f. Design an octal to binary encoder with neat circuit diagram.
   g. Write down all the characteristics of Digital ICs.

3 Show the logic diagram of clocked J-K flip-flop. Explain its working with a functional table with a neat circuit diagram. 10

4 Design a 3 bit magnitude comparator circuit for whose outputs are A>B, A<B and A=B where A & B are 3 bits binary numbers. 10

5 Which gates are referred to as Universal gates and why? How other gates can be implemented by using one of these gates? 10

6 Explain D/A conversion using R-2R ladder(weighted resistors) network. 10

7 Design a 2-bit asynchronous ripple counter (up and down) using flip-flop with a suitable logic diagram& timing diagram. 10

3RD SEM./ CSE/IT/ 2020(W) NEW
TH4 Object Oriented Methodology

Full Marks: 80 Time- 3 Hrs

Answer any five Questions including Q No.1& 2
Figures in the right hand margin indicates marks

1. Answer **All** questions 2 x 10
   a. Define object.
   b. Define data abstraction.
   c. Define constructor.
   d. Define polymorphism.
   e. Define API.
   f. Define package.
   g. Differentiate between actual and formal parameters.
   h. Differentiate between local and global variable.
   i. Explain "garbage collection" in object oriented methodology.
   j. Differentiate subclass and superclass.

2. Answer **Any Six** Questions 5 x 6
   a. Explain the concept of method overloading using suitable examples.
   b. Explain the decision control statements with proper examples.
   c. Differentiate between while and do-while loop, using suitable example.
   d. Write a program to find the factorial of a number using method invocation in object oriented methodology.
   e. Explain different types of constructors briefly.
   f. Define Abstract class? Explain the use of abstract class in object oriented programming.
   g. Explain different features of object oriented programming

3. Write a program using the object oriented concept, where the user input a number, and the system should display the reverse of that number. 10

4. Explain different types of operators with suitable examples. 10

5. Explain different types of inheritance with suitable examples. 10

6. Define exception. How exception can be handled? Explain in brief. 10

7. What is the importance of switch case in programming? Design a calculator program using switch case, where the user inputs two numbers and an operator (example: +,-,*,/); the output should be displayed based on the operator. 10

3RD SEM./COMMON /ALL Branches 2020(W) NEW

TH 5 Environmental Studies

Full Marks: 80 Time- 3 Hrs

Answer any five Questions including Q No.1& 2
Figures in the right hand margin indicates marks

1. Answer **All** questions 2 x 10

   a. Define Environment.
   b. Define deforestation.
   c. What do you mean by decomposers?
   d. What are hot spots of biodiversity?
   e. Define eco system.
   f. Write down psychological effect of noise pollution.
   g. What is solid waste management?
   h. Define green house effect.
   i. What are the major reasons of population explosion?
   j. What is Draught?

2. Answer **Any Six** Questions 6 x 5

   a. What are causes of deforestation.
   b. What are the environmental effects of mining.
   c. Give a brief description about structures of a pond eco –system.
   d. Discuss about 3R in controlling environmental pollution.
   e. What is global warming ? Write down the effects of global warming?
   f. Discuss about rain water harvesting?
   g. What is the role of an individual in controlling pollution of environment?

3 What is the need of land resources? Write the main reasons of degradation of land? 10

4 What are the changes made in agriculture? Write down the impacts of modern agriculture on environment? 10

5 What are ecological pyramids? Explain the pyramid of number and pyramid of energy? 10

6 Explain the sources of solid waste and solid waste management? 10

7 Write short notes on 10

   a. World food problem
   b. Acid rain

3RD SEM./ IT/ CSE/ 2020(W)OLD
CST-301 Data structure

Full Marks: 80 Time- 3 Hrs

Answer any five Questions including Q No.1& 2
Figures in the right hand margin indicates marks

1. Answer **All** questions 2 x 10
   a. What is Sparse matrix? Give one example.
   b. Define Adjacency matrix. Give one example.
   c. An array LA is a linear array with MXN size. Write the address of [J,K] location LOC(LA[J,K]) = ?
   d. Name four data structures.
   e. What is the function of KEY in a record?
   f. Define Recursion.
   g. What is garbage collection? State the Overflow and Underflow conditions.
   h. Define ADT.
   i. What is polish notation? Give one example.
   j. Define searching. Write two searching techniques

2. Answer **Any Six** Questions 6 x 5
   a. Define file Organisation. State the accessing techniques.
   b. Define Stack. Write PUSH and POP algorithm.
   c. Explain Bubble sorting technique with an example. Write the algorithm
   d. State the principle of Binary search tree. Create a Binary search tree with the following nodes:
   50,45,76,63,28,33,84,99,11,88.
   e. Define circular Queue. Explain how Insertion and deletion operation performed with a suitable diagram.
   f. What do you mean by complexity of an algorithm? Explain Space and Time complexity.
   g Define string. Write the string operations with suitable example.

3 What do you mean by Hashing? List out the hashing functions with examples. Explain collision resolution techniques. 10

4 Define Binary tree. What is tree traversal? Write the Recursive tree traversal algorithm. 10

5 What is linked list? How it is represented in memory. Write an algorithm for searching an element in a linked list. 10

6 Define Merging. Write the algorithms for two-way merging. Explain with a suitable example. 10

7 How we define an Array? Write algorithm for Insertion an element at m^{th} location and delete an element from m^{th} location. 10

3RD SEM./ E&TC/AE&IE/ 2020(W)OLD

ETT 302 Digital Electronics

Full Marks: 80 Time- 3 Hrs

Answer any five Questions including Q No.1& 2
Figures in the right hand margin indicates marks

1. Answer **All** questions 2 x 10
   a. Convert the following numbers into its equivalent.
   $8A3_{16} = (?)_{10}$
   $160_8 = (?)_{16}$
   b. What do you mean by a decade counter?
   c. List some applications of shift register.
   d. Define resolution and accuracy.
   e. Realize XNOR gate using NAND gates only.
   f. Draw the logic diagram of J-K flip-flop.
   g. What is Excess-3 code?
   h. Write the main features of a combinational logic circuit.
   i. What is Noise Margin?
   j. Prove the below given Boolean theorem
   A+A'B= A+B

2. Answer **Any Six** Questions 6 x 5
   a. What is an encoder? Draw and explain the logic circuit of an octal to binary encoder.
   b. What is JK master slave flip flop? Draw its logic circuit and explain its working.
   c. Explain what do you understand by 1's and 2's complement of a binary number.
   d. Explain the operation of a seven segment display.
   e. Describe the working of a parallel-in-parallel-out shift register.
   f. Discuss the working of a successive approximation A/D converter.
   g Construct and explain the working of a 2 bit magnitude comparator.

3 Minimize the following function using K-map and realise the minimised function using NOR gate 10
F(A,B,C,D)=BC'+A'B+BCD'+A'B'D+ABC'D

4 Describe the working of a decade counter with the help of logic diagram. 10

5 Explain the working of a full subtractor circuit using truth table, logic expression and logic diagram. 10

6 Which gates are referred to as universal gates and why? How other gates can be implemented using one of these gates? 10

7 Explain with the help of necessary diagram how to convert a digital signal to analog signal. What are the various performance characteristics of a D/A converter? 10

3RD SEM./ COMPUTER SCIENCE & ENGINEERING/ 2020(W)OLD

ETT 321 Digital Electronics

Full Marks: 80 Time- 3 Hrs

Answer any five Questions including Q No.1& 2
Figures in the right hand margin indicates marks

1. Answer **All** questions 2 x 10
   a. Convert the following numbers into its equivalent.
   $8A3_{16} = (?)_{10}$
   $160_8 = (?)_{16}$
   b. What do you mean by a decade counter?
   c. List some applications of shift register.
   d. Define resolution and accuracy.
   e. Realize XNOR gate using NAND gates only.
   f. Draw the logic diagram of J-K flip-flop.
   g. What is Excess-3 code?
   h. Write the main features of a combinational logic circuit.
   i. What is Noise Margin?
   j. Prove the below given Boolean theorem
   A+A'B= A+B
2. Answer **Any Six** Questions 6 x 5
   a. What is an encoder? Draw and explain the logic circuit of an octal to binary encoder.
   b. What is JK master slave flip flop? Draw its logic circuit and explain its working.
   c. Explain what do you understand by 1's and 2's complement of a binary number.
   d. Explain the operation of a seven segment display.
   e. Describe the working of a parallel-in-parallel-out shift register.
   f. Discuss the working of a successive approximation A/D converter.
   g Construct and explain the working of a 2 bit magnitude comparator.
3. Minimize the following function using K-map and realise the minimised function using NOR gate 10
   F(A,B,C,D)=BC'+A'B+BCD'+A'B'D+ABC'D
4. Describe the working of a decade counter with the help of logic diagram. 10
5. Explain the working of a full subtractor circuit using truth table, logic expression and logic diagram. 10
6. Which gates are referred to as universal gates and why? How other gates can be implemented using one of these gates? 10
7. Explain with the help of necessary diagram how to convert a digital signal to analog signal. What are the various performance characteristics of a D/A converter? 10

3RD SEM CSE/IT 2020(W) NEW

TH1- Computer System Architecture

Full Marks: 80 Time- 3 Hrs

Answer any five Questions including Q No.1& 2
Figures in the right hand margin indicates marks

1.		Answer **All** questions	2 x 10
	a.	What is Virtual Memory.	
	b.	Define throughput of a system.	
	c.	Define USB.	
	d.	Define SCSI.	
	e.	What do you mean by opcode and operand in an instruction.	
	f.	What is the principle of locality.	
	g.	What is clock cycle.	
	h.	Define subroutine.	
	i.	Define macro.	
	j.	Define hit rate.	
2.		Answer **Any Six** Questions	5 x 6
	a.	Define instruction format. Explain different instruction formats.	
	b.	Explain the instruction cycle to execute one instruction in a computer system briefly.	
	c.	Explain the memory interleaving technique with suitable example.	
	d.	Differentiate CISC and RISC processor.	
	e.	Distinguish between hardware control and microprogrammed control.	
	f.	Explain working principle of DMA.	
	g.	Define interrupt. Explain interrupt driven IO.	
	h.	Define pipeline. Explain pipeline execution in processor briefly.	
3		Explain classification of memory in a computer.	10
4		Write the function of bus. Explain the single bus structure briefly with suitable diagram.	2+6+2
5		Define addressing mode? Explain at least six addressing modes with suitable example.	1+1.5 x 6
6		Explain the Functional Units of computer	10
7		Write short notes on,	10
	i.	Fixed word length memory.	
	ii.	Variable word length memory.	
	iii.	Big endian assignment	
	iv.	Little endian assignment	

5th SEM/COMMON/ 2020 (W)

BST 501 Environmental Studies

Full Marks: 80 Time- 3 Hrs

Answer any five Questions including Q No.1& 2
Figures in the right hand margin indicates marks

1. Answer **All** questions 2 x 10

   a. Define Environment.

   b. Define deforestation.

   c. What do you mean by producers?

   d. What are hot spots of biodiversity?

   e. Define food chain and food web?

   f. Write down psychological effect of noise pollution.

   g. What is solid waste management?

   h. Define green house effect.

   i. What are the major reasons of population explosion?

   j. What is value education?

2. Answer **Any Six** Questions 6 x 5

   a. What are causes of deforestation.

   b. What are the environmental effects of mining.

   c. Give a brief description about structures of an eco –system.

   d. Discuss about 3R in controlling environmental pollution.

e. What is global warming ? Write down the effects of global warming?

f. Discuss the effect of urbanisation on the environment?

g. What is the role of an individual in controlling pollution of environment?

3	What is the need of land resources? Write the main reasons of degradation of land?	10
4	What are the changes made in agriculture? Write down the impacts of modern agriculture on environment?	10
5	Describe different types of ecological pyramid.	10
6	Write down the effect of soil pollutants.	10
7	Write short notes on a. World food problem b. Acid rain	10

5TH SEM./MECH(MAINT)/MECH(PROD.)/MECHANICAL/ 2020(W)OLD

CET-511 Object Oriented Programming

Full Marks: 80 Time- 3 Hrs

Answer any five Questions including Q No.1& 2
Figures in the right hand margin indicates marks

1. Answer **All** questions 2 x 10

   a. Write the general structure of a class.
   b. Define Visibility Mode or Access Specifier.
   c. What is Encapsulation in Object Oriented Programming?
   d. Define constructor.
   e. What is function overloading?
   f. What is scope resolution operator?
   g. Write the general syntax for Operator Overloading
   h. What is the use of Exception Handling Mechanism?
   i. What is Template in C++?
   j. Define Base class and Derived class in Inheritance.

2. Answer **Any Six** Questions 6 x 5

   a. Make a comparison between Insertion and Extraction operators in C++
   b. Why C++ is called as object oriented language?
   c. Write a C++ Program to overload the function *add()* for computation of the sum of two floating point numbers as well as two integer numbers.
   d. Define friend function. Write a simple C++ program for demonstrating friend function.
   e. Write a C++ program to define single inheritance.
   f. When do we make a class virtual ? Write the significance of virtual base class.
   g What is Exception in Object Oriented Programming? Describe the mechanism of exception handling.

3 Write various properties of Constructor and Destructor. 10

4 What is polymorphism? Describe different types of polymorphism with giving examples in each. Write a C++ program to define Operator overloading. 10

5 What do you mean by inheritance in Object Oriented Programming? What are its different types? Explain multilevel inheritance with a suitable C++ program. 10

6 Write the various properties of static member variable and static member function. 10

7 Define Generic Programming in Object Oriented Programming. Explain Function Template with a suitable example. 10

5TH SEM./CSE/IT/ 2020(W) OLD
CST-501 Computer Graphics and Multimedia

Full Marks: 80 Time- 3 Hrs

Answer any five Questions including Q No.1& 2
Figures in the right hand margin indicates marks

1.		Answer **All** questions	2 x 10
	a.	Define CAD.	
	b.	Name any two software used for Graphics and multimedia.	
	c.	What is shear?	
	d.	What do you mean by polygon mesh?	
	e.	Define specular reflection.	
	f.	Differentiate between noise and musical sound.	
	g.	Define psychoacoustic.	
	h.	What is multimedia?	
	i.	Define layer.	
	j.	What is MPEG?	
2.		Answer **Any Six** Questions	6 x 5
	a.	Define and contrast between raster scan display and random scan display.	
	b.	What is clipping? Explain line clipping method.	
	c.	What is 3D geometric transformation? Explain any three transformations.	
	d.	Write short notes on microphone.	
	e.	Explain midpoint circle algorithm.	
	f.	Discuss the various applications of computer graphics.	
	g	Define image manipulation. Explain scaling, cropping and rotation in detail.	
3		Discuss the input devices used in computer graphics and multimedia.	10
4		Write and explain Bresenham's Line drawing algorithm.	10
5		What is projection? Explain different types of projections of three dimensional viewing.	10
6		Explain TV broadcast standards-PAL, NTSC, SECAM in brief.	10
7		Briefly explain B-Spline curves and surfaces.	10

5TH SEM /COMPUTER SCIENCE & ENGINEERING/2020(W)OLD
CST502 Software Engineering.

Full Marks: 80 Time- 3 Hrs

Answer any five Questions including Q No.1& 2
Figures in the right hand margin indicates marks

1. Answer **All** questions 2 x 10
   a. Define structured analysis.
   b. What do you mean by Debugging?
   c. Define software quality management system.
   d. What is Gantt chart?
   e. State how performance of a system is evaluated.
   f. What is scheduling?
   g. What are transform and transaction analysis?
   h. Define Fan-in and Fan-out.
   i. Define project planning.
   j. What is Error seeding?

2. Answer **Any Six** Questions 6 x 5
   a. List out software life cycle models. Explain working of Classical water fall model.
   b. What are the risks associated with software project management? Explain Risk Management.
   c. Explain the contents of a good SRS document and write the characteristics of a good SRS document.
   d. What are the symbols used in DFD? Write the steps for developing DFD model of a system by taking a suitable example.
   e. What is Integration testing? Explain Phased and Incremental integration testing.
   f. State and explain Cod review concepts.
   g Explain the organisational structure and Team structure used by software developing firms.

3 Define User Interface. State the characteristics of a good interface. Explain different types of user interface. 10

4 Why Software testing is required? Explain Black box and White box testing. 10

5 What do you mean by Software reliability? Describe different types of reliability matrices used in software engineering. 10

6 What are the characteristics of a good Software design? Explain Cohesion and Coupling. 10

7 State and explain the working of COCOMO Model. 10

5TH SEM ./ COMPUTER SCIENCE & ENGINEERING /2020(W)OLD

CST-503 Communication Network & Data Communication

Full Marks: 80 Time- 3 Hrs

Answer any five Questions including Q No.1& 2
Figures in the right hand margin indicates marks

1. Answer **All** questions 2 x 10
   a. What do you mean by congestion?
   b. What is X.25?
   c. Write the functions of DHCP and DNS.
   d. List different conversion techniques for digital to analog and analog to digital communication?
   e. Analyse the need of multiplexing in communication network.
   f. How functions of switch differs from hub.
   g. Write the applications of P2P and multipoint connection.
   h. Give at least two differences of TCP and UDP.
   i. What are the functions of modem and filter.
   j. Define Nyquist Channel bandwidth.
2. Answer **Any Six** Questions 6 x 5
   a. Describe different modes of data communication.
   b. Differentiate between virtual circuit and datagram.
   c. Analyse TCP/IP layering model in a communication network and specify different protocols used in each layer.
   d. Discuss different modulation techniques used in data communication.
   e. Define IP address. Classify the IP address with their subnet mask.
   f. How CSMA/CD works in Ethernet.
   g Difference between Synchronous and Asynchronous Data Communication.
3. Illustrate the OSI layering architecture of Data Communication. 10
4. Classify different transmission media used in communication network. 10
5. What do you mean by network? Describe the types of network. 10
6. Define topology. Explain different topologies with diagram and specify the advantages and disadvantages of each topology. 10
7. Write short notes on following: (any two) 10
   a) FTP
   b) MAC address
   c) DNS
   d) DHCP

5TH SEM /CSE/IT/ 2020(W)OLD

CST504 Database Management System

Full Marks: 80 Time- 3 Hrs

Answer any five Questions including Q No.1& 2
Figures in the right hand margin indicates marks

1. Answer **All** questions 2 x 10
   a. What is the function of primary key?
   b. Define DML.
   c. What is redundancy? How it can be avoided?
   d. Differentiate Roll back and committed tranction.
   e. Define Data dictionary.
   f. What is the significance of data abstraction?
   g. Define Tuple. Give one example.
   h. Which command is used for removing (or deleting) a relation forms the SQL database?
   i. What is lossless join?
   j. Define BCNF.

2. Answer **Any Six** Questions 6 x 5
   a. Explain the three-level architecture of database with a neat suitable diagram.
   b. State different operations available in Relational Algebra. Give suitable examples.
   c. What are the different states of Transaction? Explain concurrency in transaction processing.
   d. State the basic notations of E-R diagram. Take a suitable example with diagram to explain the entities, attributes and E-R diagram.
   e. Define functional dependency. Explain types of functional dependency. Give suitable example.
   f. Explain features of Relational, Hierarchical and network data models.
   g State and explain various security levels and authorization used in data base.

3 Define Concurrency control in database. Explain the concepts of Live lock and Deadlock. 10

4 What is data encryption? Explain the security and integrity constraints. 10

5 What is a transaction? How it is scheduled for processing? Explain the properties of transaction. 10

6 Define SQL. Write down the syntax and give example for the following commands: 10
CREATE
ALTER
DROP

7 Why Normalization is needed? State the importance of Normalization. Explain 1^{st},2^{nd},3^{rd}normal forms and compare. 10

5TH SEM./ELECTRONICS & TELECOMMUNICATION ENGG/2020(W)/ (OLD)

ETT-503-NETWORK COMMUNICATION

Full Marks: 80 Time: 3 Hours

Answer any Five Questions including Q No. 1& 2

Figures in the right hand margin indicates marks

1. Answer the following: 2X10

   (a) Define Topology.

   (b) Write down advantages of networking.

   (c) Define cell switching.

   (d) What is search engine?

   (e) Define the terms frequency reuse and handoff.

   (f) Write down the use of NIC card.

   (g) Define LAN with its advantages.

   (h) Define Protocol with examples.

   (i) Draw the Client-server networking model (Diagram only).

   (j) Write down the advantages of 4G over 3G networks.

2. Answer any six questions: 5X6

   (a) Explain the working of LAN,MAN,WAN with advantages of wireless LAN.
   (b) Explain different types of transmission media used in networking.
   (c) Write down the difference between Circuit switching and Packet switching.
   (d) Explain the working of X.25 networks with neat diagram.
   (e) Explain the working of Hub, bridge, router and gateways.
   (f) Discuss the concepts of Bluetooth and WiMax technologies.
   (g) Discuss the working of serial and parallel transmission with advantages and disadvantages.

3. Discuss the working of 7 layer OSI model. (10)

4. Explain working of different network topologies used in networking (any four) with advantages. (10)

5. Discuss the architecture of GSM mobile system. (10)

6. Write short notes on (10)
   a) HTTP
   b) GPRS

7. Explain Local operating system and Network operating system. (10)

5TH SEM./CSE/IT/ 2020(W)NEW

Th2- Internet & Web Technology

Full Marks: 80 Time- 3 Hrs

Answer any five Questions including Q No.1& 2
Figures in the right hand margin indicates marks

1. Answer **All** questions 2 x 10
   a. What do you mean by computer network?
   b. Write down two differences between the internet and intranet?
   c. What does VSAT stands for? Write one of the applications of VSAT.
   d. How does firewall work?
   e. Write down two differences between Internet and WWW.
   f. Give four examples of Internet Application.
   g. What are the types of Cascading Style Sheet?
   h. How do you declare a variable in JavaScript? Give an example of it.
   i. What is the syntax of anchor tag in HTML? Give an example of it.
   j. What is the use of GET and POST method in PHP?
2. Answer **Any Six** Questions 6 x 5
   a. Briefly explain the CIDR Notation.
   b. Describe the characteristics of Good Web Design.
   c. Write down five differences between the Static Websites and Dynamic Websites.
   d. Explain five Form elements of HTML.
   e. Write down five differences between CSS and SSS.
   f. What is the use of <table> in HTML? Give an example of a simple HTML table.
   g. How to create a function in JavaScript? Explain any four of the built-in functions in JavaScript.
3. How many bits are there in IPv6 Address? Give a brief description about IP address. 10
4. Explain in details about TCP/IP Model. 10
5. What do you mean by client side scripting? How do you embed a JavaScript with HTML document? Give an example. 10
6. What does PHP stands for? What are the conditional statements used in PHP? Write a PHP program using while loop. 10
7. Write a short notes on : 10
   I. SSL
   II. Document Object Model

5TH SEM./ CSE/IT/ 2020(W) NEW

TH3-SOFTWARE ENGINEERING

Full Marks: 80 Time- 3 Hrs

Answer any five Questions including Q No.1& 2
Figures in the right hand margin indicates marks

1. Answer **All** questions 2 x 10
   a. Differentiate between program and software product.
   b. What are the responsibilities of Project Manager?
   c. Define cohesion and coupling.
   d. What do you mean by unit testing?
   e. Define error seeding.
   f. What is project planning?
   g. Name two approaches of software design.
   h. What is project scheduling?
   i. Define software reliability.
   j. What is prototype?

2. Answer **Any Six** Questions 6 x 5
   a. Explain why the spiral life cycle model is considered to be a meta model.
   b. Define COCOMO. Explain the basic features of COCOMO model.
   c. Explain the characteristics of a good interface. Classify the user interface.
   d. What is SRS? Explain the characteristics of a good SRS document and its contents.
   e. Explain different types of integration testing approaches used in software testing.
   f. Discuss about various project size estimation metrics.
   g What is fata flow diagram? Write the function of each symbols used in DFD. Discuss the short comings of DFD model.

3 Explain the function of each phase of classical waterfall model, used in software development. 10

4 Define system debugging. Discuss about various approaches and guidelines for debugging a software system. 10

5 What is risk? Describe various activities associated with risk management in software development. 10

6 What is the aim of testing? Discuss different methodologies used for white box testing. 10

7 What is software quality and how is it achieved? Discuss software quality management system. 10

5TH SEM./ Computer Science and Engineering/ 2020(W)NEW

Th4 Computer Hardware and Maintenance

Full Marks: 80 Time- 3 Hrs

Answer any five Questions including Q No.1& 2
Figures in the right hand margin indicates marks

1. Answer **All** questions 2 x 10

   a. Name Four Major Vendors of Computer Hardware.

   b. What is BIOS?

   c. Write the Function of SMPS.

   d. Write the Different parts of Mother Board.

   e. Define POST.

   f. What are the Different types of network connector?

   g. Define Memory Speed.

   h. What are the different Slots on a Mother Board?

   i. Define the Four types of Monitors.

   j. What does NTFS stands for?

2. Answer **Any Six** Questions 6 x 5

   a. Explain the Hierarchy of Computer personnel engaged in different levels in an Organisation.

   b. Explain Basic Maintenance Concepts.

   c. Explain Hardware BIOS Interaction.

   d. What are the different types of Printers available explain it.

   e. Describe about Primary Memory.

   f. Describe about different types of File System.

   g Write the difference between Core 2 Duo and Quad core Processor.

3 Describe need of Management in Computer Centres and state different types of jobs carried out in Computer Organisations. 10

4 What is trouble shooting? Describe the Methods of trouble shooting. 10

5 Describe the Different Components and Slots of Mother Board. 10

6 Describe Hard Disk Construction and its Working Principle. 10

7 Explain different Networking Interconnecting devices. 10

5TH SEM. / CSE / IT / 2020(W) NEW
Th5 Mobile Computing

Full Marks: 80 Time- 3 Hrs

Answer any five Questions including Q No.1& 2
Figures in the right hand margin indicates marks

1. Answer **All** questions 2 x 10

   a. What is Mobile Computing and its applications ?

   b. What is Communication?

   c. Define the term wireless?

   d. What are two different kinds of mobility?

   e. Define Client-Server Computing.

   f. What do you mean by Digital Signature?

   g. What are the basic services provided by the MAC layer?

   h. Define hidden terminal.

   i. What are the obstacles in mobile communications?

   j. Define signal and its types.

2. Answer **Any Six** Questions 6 x 5

   a. Explain the difference between wired and wireless networks?

   b. Discuss about each of the multiplexing techniques. Illustrate with diagrammatic representations.

   c. State the Difference between Circuit Switching and Packet Switching?

   d. What is the aim of ubiquitous computing? Describe the generations of Mobile Communication form 1G to 5G.

   e. Differentiate between cellular and Ad-Hoc Networks

   f. Explain N-Tier Architecture and its relation with WWW.

   g What is meant by WML? What are the capabilities of WML Script?

3 What is the basic purpose of DHCP? Name the entities of DHCP. 10

4 Explain in detail about Signal Propagation. Define each of the components and relation between them. 10

5 What do you mean by Modulation? Discuss the types of modulation. 10

6 a. Explain in detail about the GSM architecture with Diagrammatic Representation. 10
   b. Describe the mobile services provided by GSM.

7 Draw a neat diagram of WAP architecture and explain in detail. 10