

SOFTWARE ENGINEERING [15CS51T]

Sl No.	Questions	Marks	Year
UNIT – 1 [The software problem & Software process]			
1.	Define software engineering. Differentiate between process and project	5	May 2018/Nov 2019
2.	Explain Water-fall model with a neat diagram	10	May 2018/ Dec 2017/May 2019
3.	Explain time boxing model with neat diagram	10	May 2018
4.	Explain Cost, schedule and Quality of software.	5	Dec 2018
5.	List various software development process models.	5	Dec 2018
6.	Explain prototyping model of software development model.	5	Dec 2018
7.	Define main attributes of software quality	5	Dec 2017/Nov 2019
8.	Discuss Rational Unified Process (RUP) model with neat diagram.	10	Dec 2018
9.	a. List out any five common principle of Agile approach	5	Dec 2017
	b. Differentiate between process and project	5	
10.	Explain the basic driving factors for software engineering.	5	May 2019
11.	Describe Time boxing model with a neat diagram.	10	May 2019/Nov 2019
12.	Discuss project management process	5	Nov 2019
UNIT – 2 [Software requirements analysis and specifications]			
1.	Mention the values of good SRS	5	May 2018
2.	Explain the components of SRS	10	May 2018/ Dec 2018/May 2019
3.	Discuss the use case scenario with an example	10	May 2018/ Dec 2018/May 2019
4.	Explain the general structure of an SRS	5	Dec 2017
5.	Define use case. List out the terms used in use case	5	Dec 2017/Nov 2019
6.	Explain requirement process.	5	Dec 2017
	Explain requirement process with neat diagram	10	
7.	Explain in detail desirable characteristics of an SRS	5/10	Dec 2017/ Dec 2018/May 2019/Nov 2019
UNIT – 3 [Software architecture & Planning a software project]			
1.	Explain the role of software architecture	5	May 2018/ Dec 2017/ Dec 2018/May 2019
2.	Explain component and connector view	5	May 2018/Dec 2018
3.	Explain Peer-to-Peer and publish subscribe styles	5	May 2018/Dec 2018
4.	Explain shared data styles	10	May 2018
5.	Explain COCOMO model	10	May 2018/May 2019
6.	Explain top down approach of effort estimation for COCOMO model.	5	Dec 2017/Nov 2019
	Explain Top-down estimation approach		
7.	Explain project monitoring and tracking plan.	5	Dec 2017
8.	Explain various Architectural styles	10	Dec 2017/Dec 2018
	Explain client server architectural style.		
9.	Discuss the concept of Risk assessment and Risk control	10	Dec 2017/Nov 2019
10.	Explain Quality Planning.	10	Dec 2018
11.	Explain project scheduling and staffing with an example.	5	May 2019/Nov 2019
12.	Explain measurements in project monitoring plan.	5	May 2019
13.	Explain components and connectors with a neat diagram.	10	May 2019
14.	Describe DFD with a suitable example.	10	Nov 2019
UNIT – 4 [Design]			
1.	Define coupling. List the different types of it.	5	May 2018/ Dec 2017/Dec 2018

2.	Explain different levels of cohesion Define Cohesion. Explain the different levels of Cohesion	10 5	May 2018/ Dec 2017/Nov 2019 May 2019
3.	Explain main object oriented concepts	10	May 2018/Nov 2019
4.	Describe Structured Design Methodology for function-oriented design.	10	Dec 2018/May 2019
5.	With reference to UML, explain the concept of class diagram.	10	Dec 2017
6.	Define UML. List different types of UML models.	5	Dec 2018
7.	Explain object oriented design methodology.	10	May 2019
8.	Explain different architectural views with an example each.	10	Nov 2019
9.	Describe class diagram and sequence diagram with a suitable example.	10	Nov 2019
UNIT – 5 [Coding & Testing]			
1.	Explain coding standards	5/10	May 2018/ Dec 2018/May 2019
2.	Explain Test Driven Development (TDD) with neat flow chart	10	May 2018/ Dec 2018/May 2019
3.	Explain code inspection	10	May 2018
4.	Explain code inspection and summarize the report of an inspection	5	Dec 2017/Nov 2019
5.	Explain any 10 programming practices to be followed to make the code easier to read and to avoid errors	10	Dec 2017
6.	Explain different levels of testing and goals of each level	10	Dec 2017/Dec 2018
7.	Explain the terms Error,Fault,Failure,Test case and Test suite.	5	May 2019
8.	Explain life cycle of defect.	10	Nov 2019
UNIT – 6 [Devops]			
1.	Explain the DevOps tool chain. Explain the Devops Tools.	5 5	May 2018/ Dec 2017/May 2019 Nov 2019
2.	Define Devops. Explain the benefits and goals of DevOps Define Devops.Discuss the goals of DevOps.	10 5	May 2018/ Dec 2018/Nov 2019 May 2019

WEB PROGRAMMING [15CS52T]

Sl No.	Questions	Marks	Year
UNIT – 1 [Fundamentals and Introduction to XHTML]			
1.	Define Web Browser, Web Server, Events, Event handling, www, Domain name and Internet	5	Dec 2017/ May 2018
2.	Illustrate the HTTP protocols request and response phases with an example for each. Explain the HTTP protocols request and response phases.	10	Dec 2017/ May 2018/ Dec 2018/ May2019/ Nov 2019
3.	Explain the general server characteristics.	5	Dec 2018
4.	Mention the differences between HTML and XHTML.	5	May 2019
5.	Explain MIME with its type specification.	5	Nov 2019
UNIT – 2 [Java Script and XHTML Documents and Dynamic documents with JavaScript]			
1.	Describe the parameters and actions of setTimeout and setInterval functions	5	Dec 2017/ May 2018/ May 2019/Nov 2019
2.	a. Illustrate moving elements with simple example b. List DOM node properties Illustrate moving elements with an example	10 5	Dec 2017/ May 2018 May 2019
3.	Explain different types of positioning with example	10	Dec 2017/ May 2018/ Dec 2018/ May2019/ Nov 2019
4.	Illustrate with an example dynamic stacking of images	10	Dec 2017/ May 2018/May 2019
5.	Explain how to handle focus and blur event with an example	10	May 2018/Dec 2018
6.	Explain how to access XHTML elements in Javascript with example.	10	Dec 2018/May 2019
7.	Explain two ways to register an event handler in DOM-0 event model.	10	Dec 2018
8.	Explain the structure of DOM.	5	May 2019
9.	Explain the three phases of event processing in the DOM2 event model.	10	Nov 2019
UNIT – 3 [Introduction to XML]			
1.	Define DTD. Mention 4 possible keywords in DTD declaration	5	Dec 2017/ May 2019/Nov 2019
2.	Illustrate internal and external DTDs with an example	5	Dec 2017/Nov 2019
3.	Explain different XSD indicators	10	Dec 2017/ May 2018/ Dec 2018/Nov 2019
4.	Illustrate declaring of elements, attributes and entities in DTD with example.	10	May 2018
5.	Explain how to declare namespace with example	5	May 2018/Dec 2018
6.	Describe the structure of XML document.	5	Dec 2018
7.	Define XML schema.List the advantages of XML schema over DTD.	5	May 2019
8.	Demonstrate with example,how to create simple type and complex type elements.	10	May 2019
UNIT – 4 [Introduction to PHP]			
1.	List and Explain 4 scalar types of PHP	5	Dec 2017/ May 2018/May 2019/Nov 2019

2.	Explain built-in string manipulation functions	5	Dec 2017/ May 2018/ Dec 2018/ Nov 2019
3.	Explain how to create indexed and associated array with example	10	Dec 2017/ May 2018/Dec 2018
4.	Write PHP script to illustrate sort, assort and ksort function.	10	Dec 2017/ Dec 2018/May 2019
5.	Explain preg-match() and preg-split() functions with example.	5	Dec 2018/May 2019
6.	Explain the syntax of for-each statement with an example.	5	May 2019
7.	Explain the types of arrays in PHP.	5	May 2019
8.	Explain how to create indexed and associative array with an example.	10	Nov 2019

UNIT – 5 [Database access through the web]

1.	Explain method used to executed SQL queries with syntax	5	Dec 2017/ Dec 2018/Nov 2019
2.	Write PHP script to create table insert records into table, retrieve record from table. Assume table “Student” already created with fields Reg no., Name, Phone and Address	10	Dec 2017/ May 2018/Dec 2018
3.	Explain with example steps involved in accessing the MySQL database through JDBC	10	May 2018/May 2019/Nov 2019
	Describe connecting to MySQL and selecting a database.	5	May 2019

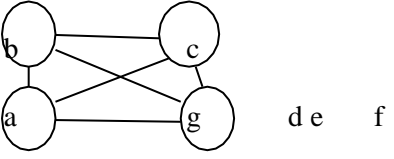
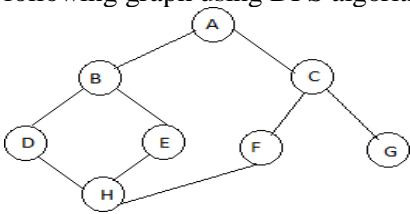
UNIT – 6 [Java Web Software]

1.	Write note on Java Beans	5	Dec 2017/ Dec 2018/Nov 2019
2.	Explain JSF event handling	5	Dec 2017
3.	Explain life cycle of servlet	10	Dec 2017/ May 2018/Nov 2019
4.	Illustrate JSTL control action elements with an example for each	10	Dec 2017/Dec 2018
5.	Explain the processing flow of JSP document with neat diagram	10	May 2018/ Dec 2018/Nov 2019
6.	Define cookie. Explain how to set and retrieve a cookies	10	May 2018/Nov 2019
7.	Explain the two standard tag libraries of JSF	5	May 2018/ May 2019/Nov 2019
8.	Explain doGet and doPost methods of the HTTP servlet class.	5	Dec 2018
9.	List the five parts of JSTL.	5	May 2019
10.	Explain model view Controller Application Architecture with a neat diagram.	10	May 2019
11.	Write a note on servlet containers.	10	May 2019

DESIGN AND ANALYSIS OF ALGORITHMS [15CS53T]

Sl No.	Questions	Marks	Year
UNIT – 1 [Introduction]			
1.	Define Algorithm. Give an example illustrating the notion of an algorithm	5	May 2018/Nov 2019
2.	Define Graph, vertex, Path, edge and Length of a path weighted graph and connected graph with example for each.	5	May 2018/ Dec 2017/Dec 2018
3.	Explain the important problem types	5/10	May 2018/May 2019
4.	a. Explain Euclid's algorithm for computing GCD of two numbers	5	May 2018/ Dec 2018/May 2019/Nov 2019
	b. Distinguish between sets and dictionaries.	5	
5.	Explain Rooted Trees and Ordered Trees.	5	Dec 2017
	Explain Rooted Trees and Ordered Trees with an example for each.	5	Nov 2019
6.	Write a note on Sorting and Searching problem types.	10	Dec 2017/Dec 2018
7.	Explain the steps involved in designing and analyzing of an Algorithm.	10	Dec 2017/ Dec 2018/ May 2019/Nov 2019
8.	Explain graph problems and string processing problems.	5	Dec 2018
9.	Define: (a) Algorithm (b) Queue (c) Graph (d) Ordered Tree (e) Sets	5	May 2019
10.	Differentiate undirected and directed graphs with examples.	5	May 2019
UNIT – 2 [Fundamentals of the Analysis of Algorithm Efficiency]			
1.	List the steps to be followed while analyzing non-recursive algorithm.	5	May 2018
2.	Explain informal definitions of asymptotic notations	5	May 2018
3.	Illustrate the recursive solution to the tower of Hanoi Puzzle	10	May 2018/ Dec 2018/Nov 2019
4.	Illustrate an algorithm for sequential search and analyse its best-case, worst-case and average-case efficiencies.	10	May 2018/ Dec 2017
	Write an Algorithm for sequential search.	5	Nov 2019
5.	Write a recursive algorithm for computing factorial function for an arbitrary non-negative integer	5	Dec 2017/ Dec 2018/Nov 2019
6.	Explain basic asymptotic efficiency classes	5/10	Dec 2017/ May 2019/Nov 2019
7.	Explain Big-oh notation, Big-delta notation and Big-theta notation along with its graph.	10	Dec 2017/ Dec 2018/ May 2019
8.	Write an algorithm for finding the value of the largest element in a list of 'n' numbers.	5	Dec 2018

9.	List the steps to be followed while analyzing recursive algorithms. Write a recursive algorithm for computing the factorial function for an arbitrary non-negative integer.	10	May 2019
UNIT – 3 [Brute Force & Exhaustive Search]			
1.	Illustrate Travelling Salesman Problem(TSP) with the following example: <pre> a-----3-----b 6 8 4 9 c-----d 2 </pre>	5	May 2018
	Illustrate Travelling Salesman Problem(TSP) with the following example: <pre> 2 a b 5 8 7 3 c 1 d </pre>	10	May 2019
2.	Write an algorithm for selection sort and apply the same for the following array: 6, 21, 41, 46, 16 Write an algorithm for selection sort and apply the same for the following array: 89,45,68,90,29,34,17 OR 45,23,89,10,11,27,38	10 10	May 2018/ Dec 2017 May 2019
3.	Write an algorithm for Depth First search and explain with an example	10	May 2018
4.	Apply bubble sort to the following array: 89, 45, 68, 90, 29, 34, 17	10	May 2018
5.	Define Brute force and explain it with an example	5	Dec 2017/ Dec 2018/ May 2019/Nov 2019

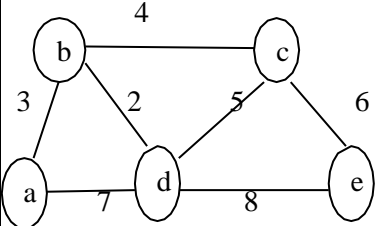
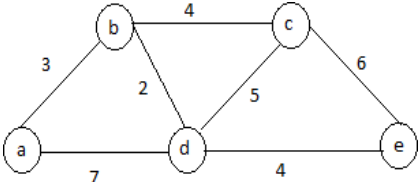
6.	Explain Knapsack problem with an example	10	Dec 2017
7.	Write an algorithm for sequential search.	5	May 2019
8.	Consider Knapsack for the instance given below: $N=3$ $[W1,W2,W3]=[100,10,10]$ $[P1,P2,P3]=[20,15,15]$ $M=105$ Find all feasible and infeasible solutions.	5	May 2019
9.	Write an algorithm for Breadth First Search and give the BFS sequence for the following graph: 	10	Dec 2017
10.	Write Depth First Search (DFS) algorithm and solve the following graph using DFS algorithm. 	10	Dec 2018
11.	Explain Breadth First Search algorithm.	10	May 2019/ Nov 2019

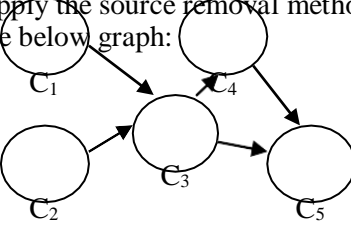
DESIGN AND ANALYSIS OF ALGORITHMS [15CS53T]

UNIT – 4 [Divide-and-Conquer]			
1.	Write an algorithm for binary search.	5	Dec 2017/ May 2018/Nov 2019
2.	Define Binary tree and <u>explain its traversal</u>	5	May 2018/ Dec 2018/May 2019
3.	Write an algorithm for merge sort <u>and explain</u> Explain with following example: 10, 5, 25, 3, 55, 20 OR 12,24,8,7,4,23,6,89	10	May 2018/ Dec 2017
4.	Explain Divide and Conquer technique with a neat diagram	5	Dec 2017/ Dec 2018/ May 2019/Nov 2019
5.	Apply Bubble sort to the following array: 70,30,20,50,60,10,40	10	Dec 2018
6.	Trace the following set of numbers using Quick sort algorithm: 50,30,10,90,80,20,40,70	10	Dec 2018
7.	Write an algorithm for Quick sort and apply the same for the following array: 5 3 1 9 8 2 4 7	10	May 2019
UNIT – 5 [Decrease-and-Conquer]			
1.	Explain Decrease and conquer technique with an example	5	May 2018/Dec 2018
2.	Write an algorithm for insertion sort and illustrate with following example: 20, 40, 60, 10, 30, 55 Compute time complexity of insertion sort in the best, worst and average cases.	10 10	May 2018 Dec 2018
3.	Explain Topological sorting with an example	5	Dec 2017
4.	Write an algorithm for Insertion sort and explain it with following example: 20, 60, 10, 40, 30, 5, 50 OR 30,70,20,50,40,10,60	10	Dec 2017
5.	Apply the source removal method to find the topological order for the below graph: <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">C₁</div> <div style="text-align: center;">C₄</div> </div> <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 20px;"> <div style="text-align: center;">C₂</div> <div style="text-align: center;">C₃</div> <div style="text-align: center;">C₅</div> </div>	5	May 2019
6.	Write an algorithm for insertion sort and apply it for the following array: 45,23,89,10,11,27,38	10	May 2019
UNIT – 6 [Greedy Technique]			
1.	Explain greedy method with appropriate example. Explain Greedy Technique.	5 5	May 2018/Dec 2018 Nov 2019
2.	Explain Kruskal's <u>algorithm</u> for constructing minimum spanning tree	10	May 2018
3.	Apply Prim's algorithm for the graph shown below:		

		5	Dec 2017
4.	Write Dijkstra algorithm and explain	10	Dec 2017
5.	Write Prim's algorithm for constructing a minimum spanning tree.	10	Nov 2019

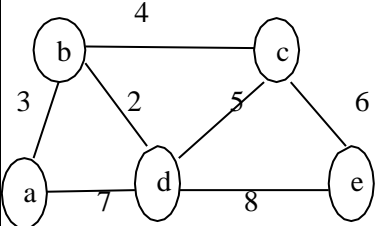
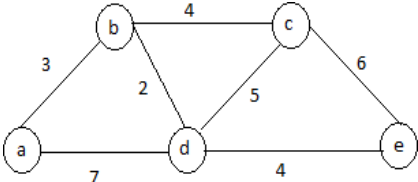
DESIGN AND ANALYSIS OF ALGORITHMS [15CS53T]

5.	Consider Knapsack for the instance given below: $N=3, M=105$ $[W_1, W_2, W_3,]=[100,10,10]$ $[P_1, P_2, P_3,]=[20,15,15]$ Find all feasible and infeasible solutions.	10	Dec 2018
6.	Write the Algorithm to find the minimum cost spanning tree based on Prim's logic.	5	May 2019
7.	Apply Kruskal's algorithm to find the minimum spanning tree for the graph shown below: 	10	May 2019
8.	Explain Dijkstra's algorithm for the following graph 	10	Dec 2018

UNIT – 4 [Divide-and-Conquer]			
1.	Write an algorithm for binary search.	5	Dec 2017/ May 2018/Nov 2019
2.	Define Binary tree and explain its traversal	5	May 2018/ Dec 2018/May 2019
3.	Write an algorithm for merge sort and explain Explain with following example: 10, 5, 25, 3, 55, 20 OR 12,24,8,7,4,23,6,89	10	May 2018/ Dec 2017
4.	Explain Divide and Conquer technique with a neat diagram	5	Dec 2017/ Dec 2018/ May 2019/Nov 2019
5.	Apply Bubble sort to the following array: 70,30,20,50,60,10,40	10	Dec 2018
6.	Trace the following set of numbers using Quick sort algorithm: 50,30,10,90,80,20,40,70	10	Dec 2018
7.	Write an algorithm for Quick sort and apply the same for the following array: 5 3 1 9 8 2 4 7	10	May 2019
UNIT – 5 [Decrease-and-Conquer]			
1.	Explain Decrease and conquer technique with an example	5	May 2018/Dec 2018
2.	Write an algorithm for insertion sort and illustrate with following example: 20, 40, 60, 10, 30, 55 Compute time complexity of insertion sort in the best, worst and average cases.	10 10	May 2018 Dec 2018
3.	Explain Topological sorting with an example	5	Dec 2017
4.	Write an algorithm for Insertion sort and explain it with following example: 20, 60, 10, 40, 30, 5, 50 OR 30,70,20,50,40,10,60	10	Dec 2017
5.	Apply the source removal method to find the topological order for the below graph: 	5	May 2019
6.	Write an algorithm for insertion sort and apply it for the following array: 45,23,89,10,11,27,38	10	May 2019
UNIT – 6 [Greedy Technique]			
1.	Explain greedy method with appropriate example. Explain Greedy Technique.	5 5	May 2018/Dec 2018 Nov 2019
2.	Explain Kruskal's algorithm for constructing minimum spanning tree	10	May 2018
3.	Apply Prim's algorithm for the graph shown below:		

		5	Dec 2017
4.	Write Dijkstra algorithm and explain	10	Dec 2017
5.	Write Prim's algorithm for constructing a minimum spanning tree.	10	Nov 2019

DESIGN AND ANALYSIS OF ALGORITHMS [15CS53T]

5.	Consider Knapsack for the instance given below: $N=3, M=105$ $[W_1, W_2, W_3,]=[100,10,10]$ $[P_1, P_2, P_3,]=[20,15,15]$ Find all feasible and infeasible solutions.	10	Dec 2018
6.	Write the Algorithm to find the minimum cost spanning tree based on Prim's logic.	5	May 2019
7.	Apply Kruskal's algorithm to find the minimum spanning tree for the graph shown below: 	10	May 2019
8.	Explain Dijkstra's algorithm for the following graph 	10	Dec 2018

GREEN COMPUTING [15CS54T]

SI No.	Questions	Marks	Year
UNIT – 1 [Green IT: An Overview]			
1.	Define Green IT. List the benefits of Green IT	5	Dec 2017/ May 2018/ Dec 2018/ May 2019/ Nov 2019
2.	Mention six holistic approaches that addresses Green IT with neat diagram	10	Dec 2017/ May 2018/Nov 2019
3.	Explain the 3Rs of Green IT	10	Dec 2017/Dec 2018
4.	Does software usage affect environment? Describe.	10	Dec 2018
5.	Describe different dimensions or directions of Green IT.	5	May 2019
6.	Mention the Drivers of environmental sustainability and Green IT.	5	May 2019
UNIT – 2 [Green Devices and Hardware with Green Software]			
1.	Explain the various e-waste disposal techniques and mention the most effective among them with reason	5	Dec 2017
2	Explain different types of processor power states	5	Dec 2017/ May 2018/ Dec 2018/ Nov 2019
3.	Explain the life cycle of a device or hardware with diagram	10	Dec 2017/ May 2019
4.	Define Computational efficiency. Explain the different programming methods used to achieve computational efficiency.	10	Dec 2017/ May 2018/Dec 2018
5	Explain the impacts of various chemicals used in manufacturing process of electronic devices	5	May 2018/ Dec 2018/May 2019
6.	Summarize Reuse, Recycle and Disposal methods of an electronic device.	10	May 2018/ Nov 2019
7.	Mention the strategies that help to reduce power consumption by monitor.	5	Dec 2018
8.	What is pre-fetching and caching? Mention the three guidelines that save energy during DVD playback.	5	Dec 2018
9.	Discuss the different methods of data efficiency.	5/10	May 2019/ Nov 2019
10	Explain energy saving software technique.	5	Nov 2019
UNIT – 3 [Green Enterprises and the Role of IT]			
1.	Explain the four major categories of enablers for Green IT.	5	Dec 2017/ May 2018/ Dec 2018/ Nov 2019
2.	Explain with diagram ERP system with modules and relationships	10	Dec 2017/ Nov 2019
3.	Explain with diagram the flows and operations of a de-manufacturing facility.	10	Dec 2017/ Nov 2019
4.	Explain different software and database aspects of an EMIS	10	May 2018/ May 2019
5.	Explain with diagram the flows and operations of a de-manufacturing facility.	10	May 2018/ May 2019
6.	List the different issues in integrating ERP with EMIS system.	5	Dec 2018/ May 2019/ Nov 2019
7.	Write a note on Greening the Enterprise: IT Usage and Hardware.	10	Dec 2018
8.	Write a note on context awareness in computers.	5	May 2019

UNIT – 4 [Managing Green IT]			
1.	Give the differences between strategic thinking and strategic planning	5	Dec 2017/Dec 2018
2.	Explain Enterprise Architecture Planning(EAP) with different Layers with neat diagram	10	Dec 2017/ May 2018/ Dec 2018/ May 2019/ Nov 2019
3.	Explain the continuous Risk Management with a neat diagram	10	Dec 2017/ May 2018/May 2019
4.	Explain the three steps GQM paradigm	5	May 2018/ Dec 2018/Nov 2019
5.	Mention the four key components of Green IT management.	5	May 2019
UNIT – 5 [Regulating the Green IT: Laws, Standards and Protocols]			
1.	Mention the several key standards for process and product of Green IT.	5	Dec 2017
2.	Explain with diagram for global regulatory environment for electrical electronic and IT sectors	5/10	Dec 2017/ May2019/ Nov 2019
3.	Give the differences between RoHS, REAch and WEEE	10	Dec 2017
4.	Discuss the various functions of Green-IT based applications	5	May 2018
5.	Mention the four criteria to evaluate electronics manufacturers employed by Greenpeace.	5	May 2018/ May 2019
6.	Write a note on REACH and ROHS and WEEE	10	May 2018/Dec 2018
	Explain REACH and WEEE.	10	May 2019
	Write a note on ROHS and REACH.	10	Nov 2019
7.	Mention the four key components of initiating Green IT management.	10	Dec 2018
8.	Discuss the terms industry association and standard bodies.	5	Dec 2018

UNIT – 6 [Green IT: An Outlook]			
1.	List any five principles of Green Engineering	5	Dec 2017/ May 2018/ Dec 2018/ Nov 2019
2.	Explain the various key sustainability and Green IT trends.	10	Dec 2017/ May 2018/ Dec 2018/Nov 2019
3.	Explain seven-step approach to create Green IT strategy.	10	Dec 2017/ May 2018/ Dec 2018/ May2019/ Nov 2019
4.	What are Smart Grids? Mention the key benefits of Smart Grid.	5	Dec 2018
	Explain the key benefits of Smart Grid.	5	May 2019
5.	Write a short note on (a) Green Engineering (b) Smart buildings and homes	10	May 2019
6.	Write a note on communication and social media.	5	Nov 2019
7.	Mention functions of Green IT based application.	5	Nov 2019

