

Unit 1			
1	Define variable. Summarize the rules and guide lines for naming variable.	5M	Nov/Dec 2016 April/May 2017/Dec 2018/Nov2019
2	Define flow chart. List the symbols used in flow charts.	5M	Nov/Dec 2016/Nov2019
3	Explain the basic data types of C language. List the basic data types with byte specification.	10M 10M	Nov/Dec 2016 April/May 2017/Dec2018/ May 2019
4	Write an algorithm and C program to swap the two variables without using third variables.	10M	Nov/Dec 2016/Dec 2018
5	Explain formatted input and output statements used in C with syntax and example. With general syntax, explain formatted input-output statements. Give example for each.	10M 10M	April/May 2017 April/May2018/ May 2019/ Nov 2019
6	Write an algorithm and c program to find sum and average of three numbers.	10M	April/May 2017 Nov/Dec 2017 April/May 2018
7	Define constant. List the different types of C constants. What is constant? Explain different types of C constant.	5M 5M	Nov/Dec 2017 April/May 2018/May 2019
8	Discuss the important features of C language.	5M	Nov/Dec 2017
9	Define algorithm. Explain its characteristics. Define algorithm. List out its characteristics.	5M 5M	Nov/Dec 2017 April/May 2018
10	Write a flowchart to compute addition of given two numbers.	5M	Nov/Dec 2018
11	Write an algorithm and C program to find the largest of 3 numbers.	10M	Nov 2019

Unit 2			
1	Discuss relational and logical operators. List and explain different relational operators with examples.	5M	Nov/Dec 2016 Nov/Dec 2017/ May 2019
2	Explain FOR statement with an example.	5M	Nov/Dec 2016 April/May 2017/Nov 2019
3	Illustrate the switch statement with syntax and example. With general syntax, explain switch statement.	10M 5M	Nov/Dec 2016 April/May 2017 Nov/Dec 2017/ Nov 2019 April/May 2018/May 2019
4	Write a C program to find the reverse of a given number.	10M	Nov/Dec 2016

PROGRAMMING WITH C [15CS31T]

5	Differentiate between WHILE and DO-WHILE statement. Explain the following with syntax: (a) While loop (b) Do-while loop Explain entry controlled and exit controlled loop with an example.	5M 10M 10M	April/May 2017/Dec 2018/Nov2019 April/May 2018 May 2019
6	Explain the syntax of IF-ELSE statement. Write a C program to check whether a given number is even or odd using IF-ELSE statement. Describe IF-ELSE ladder with suitable example. Write the general syntax of if and if-else statement.	10M 5 M 10M 5M	Nov/Dec 2016 April/May 2017 Nov2019 Nov/Dec 2018 May 2019/
Unit 3			Nov 2019
7	Discuss the advantages of functions. a) break b) continue c) go to d) label e) conditional	5M	Nov/Dec 2016/Dec 2018/Dec 2018
2	Write a C program to find the factorial of given number	10M	Nov/Dec 2016
8	Explain nested for loop with example. Explain nested for loop with general syntax and example.	10M 10M	April/May 2017 Nov/Dec 2017 April/May 2018
9	Write a program to find the GCD of two given numbers using a function or not.	10M 10M	Nov/Dec 2018/Dec 2018 May 2019/Nov 2019
30	Explain the following expressions: $a+2$, $b*$, $4/6$, 12 example.	5M	April/May 2017
4	Differentiate between call by value and call by reference.	5M	April/May 2017
51	Describe C program to compute all possible combinations.	5M	Nov/Dec 2018
6	Explain a condition for using switch statement.	5M	Nov/Dec 2017/Dec 2018
12	Write a C program to compute transpose of a given matrix. List the differences between actual and formal parameters.	10M	Nov/Dec 2018/Dec 2019 May 2019
73	Write a program to find the sum of all integers greater than 100 and less than 2000 which are divisible by 7.	5M	April/May 2018 Nov 2019
84	Write a short note on C library functions.	5M	April/May 2018
9	What is function prototype? Explain with an example.	5M	May 2019

Unit 4			
1	a)With an example Explain how to declare and initialize a single dimensional array.	5M	Nov/Dec 2016 April/May 2017 Nov/Dec 2017 April/May 2018/Dec 2018
	b) List the advantages and disadvantages of array.	5M	Nov/Dec 2016
	Define an array.Explain how to declare and initialize one dimensional array.	5M	May 2019/ Nov2019
2	Write a C program to find the sum of two matrices.	10M	Nov/Dec 2016 April/May 2017
3	Write a C program to search an element in an array.	10M	Nov 2019
4	Illustrate the declaration and initialization of two dimensional array.	10M	Nov/Dec 2017
5	Discuss array of structure with an example.	10M	Nov/Dec 2017

6	Write a program to transpose a given matrix.	5M	April/May 2018
7	Write a program to sort N elements of an array.	10M	April/May 2018/ May 2019
8	Compare single dimensional array with multi-dimensional array.	5M	Nov/Dec 2018
9	Write a C program to store 25 elements in 5 rows and 5 columns and display the number in matrix format.	5 M	Nov 2019

Unit 5			
1	List string handling functions.	5M	Nov/Dec 2016/ Nov 2019
2	Explain briefly how to use # define directive.	5M	Nov/Dec 2016
3	Write a c program to concatenate two strings using built-in string function.	10M	Nov/Dec 2016
4	Define macro. Explain macro substitution with example.	5M	May 2017/ Dec 2018/ May 2019
5	Define string. Explain string handling functions of C.	10M	April/May 2017
6	Explain the following string handling functions a) strcmp() c) getchar() e) strcut() b) strlen() d) strrev() f) strcpy()	10M	Nov/Dec 2017 Nov/Dec 2018
	Explain: (i) Strcat() (ii) Strcmp() with an example.	10M	May 2019
7	Write a C program to compare two strings.		
8	Define string. How to declare and initialize string variables with an example?	5M	April/May 2018
9	Write a program to find area of a circle using macros.	10M	April/May 2018/Nov 2019
10	Explain pre-processor directive.	5M	Nov/Dec 2018

Unit 6			
1	Define structure. Explain with example the general syntax of a structure.	5M	Nov/Dec 2016 April/May 2017 Nov/Dec 2017/Dec 2018/Nov 2019
2	Differentiate between union and structure.	5M	Nov/Dec 2016/Dec 2018/May 2019/ Nov 2019
3	Write a C program to create structure with employee details and display the same.	10M	Nov/Dec 2016 April/May 2017/Dec 2018
4	Define union. Explain the general syntax of union with example.	5M	April/May 2017 April/May 2018
5	Write a C program to create structure with five student's details and display the same.	10M	May 2019
	Write a program to read N students information and display it.	10M	Nov 2019
6	What are structure variables? Explain how to declare and initialize structure variable.	5M	April/May 2018/ May 2019
7	Write a program to illustrate array of structures.	10M	April/May 2018

COMPUTER ORGANIZATION [15CS32T]

Sl No.	Questions	Marks	Year
UNIT – 1 [Basic Structures of Computers]			
1.	Describe the basic functional unit of computer	5	Dec 2016/Dec2018/ May 2019/ Nov 2019
2.	Describe the role of MAR, MDR, PC, and IR and Bus	5	Dec 2017/ May 2018
UNIT – 2 [Machine Instructions & Programmes]			
1.	Explain the Big-Endian and Little-Endian addressability	5	Dec 2016/ Dec 2017/ May 2018/ Dec 2018/Nov 2019
2.	Explain the basic memory operation	5	Dec 2016/ Dec 2017/ May 2018/Dec 2018/ May 2019
3.	Explain with example one-address, two-address and three-address instruction types. List the types of instructions.Explain any one.	10 5	Dec 2016/ Dec 2017/ May 2018/Dec 2018 May 2019
4.	Illustrate with example the following addressing modes: Direct, Indirect, Immediate List the types of addressing modes.Explain Immediate and Indirect addressing mode.	10 10	Dec 2016 May 2019
5.	Explain different assembler directives Explain any five assembler directives with its purpose.	5/10 10	Dec 2017/ Nov 2019 May 2019
6.	Illustrate with example indirect addressing	1 0	May 2018/ Nov 2019
7.	a) Describe register and absolute addressing mode. b) Write a note on conditional codes.	5/10	Dec 2018/Nov 2019
UNIT – 3 [Basic Processing Unit]			
1.	Write a note on Register transfer	5	Dec 2016
2.	Explain single bus organization	1 0	Dec 2016/Dec 2018/May 2019
3.	With block diagram explain complete processor	1 0	Dec 2016/ Dec 2017/ May 2018/Dec 2018/Nov 2019
4.	Write a note on Hard Wired Control Unit Explain how control signals are issued using Hard Wired control unit.	5 10	Dec 2017 May 2019
5.	Describe fetching a word from memory	5	Dec 2017
6.	Explain how a complete instruction is executed	5	Dec 2017/ May 2018/May 2019
7.	Explain multi-bus organization	1 0	May 2018
8.	Explain the different phases for instruction execution.	5	Dec 2018/ May 2019/Nov 2019
9.	Explain the concept of microprogrammed control unit.	5	May 2019/Nov 2019
UNIT – 4 [Input Output Organization]			
1.	Write a note on interrupts	5	Dec 2016/ Dec 2018/ May 2019
2.	a. Explain bus arbitration logic b. List the activities of I/O interface	5/10	Dec 2016/Nov 2019

COMPUTER ORGANIZATION [15CS32T]

3.	Explain hardware components for connecting keyboard to processor with block diagram	10	Dec 2016
4.	Explain the memory mapped I/O concept	5	Dec 2017
5.	Explain how to enable and disable an interrupt	5	Dec 2017
6.	With block diagram explain serial port interface	10	Dec 2017
7.	Describe the working of DMA	10	Dec 2017/ May 2018/ Dec 2018/May 2019/Nov 2019
8.	Write a note on vectored interrupts	5	May 2018
9.	Explain the use of PCI bus in computer system	5	May 2018
10.	Write a note on SCSI bus	5	May 2018
11.	Explain with example parallel port connectivity.	10	Dec 2018/May 2019
12.	(a) Differentiate between synchronous and asynchronous bus. (b) Mention the functions performed by I/O Interface.	10	May 2019
13.	Illustrate with example Interrupt Service Routine(ISR).	10	Nov 2019
UNIT – 5 [The Memory System]			
1.	Illustrate how to implement static RAM memory cell	5	Dec 2016/ Dec 2017/Dec 2018
2.	Explain the configuration of ROM cell	5	Dec 2016/ Dec 2018/Nov 2019
3.	Write a note on RAM bus memory	5	Dec 2016/ Dec 2017
4.	Describe types of ROM	10	Dec 2016/ May2018/ Dec 2018/May 2019/Nov 2019
5.	Illustrate with diagram memory hierarchy with respect to speed, size and cost	10	Dec 2016/ May 2018/Dec 2018
6.	Write a note on Flash memories	5	Dec 2017/ May 2018/ Dec 2018/ Nov 2019
7.	Explain the internal organization of memory chips	10	Dec 2017/Nov 2019
8.	Expalin the significance of cache memory.	5	May 2019
9.	Explain the use of memory controller with diagram	10	Dec 2017
10.	Write a note on Memory hierarchy	5	Dec 2017
11.	Explain the Double data rate SDRAM concept	5	May 2018
12.	Explain the significance of cache memory	5	May 2018
13.	Explain static and dynamic memory system.	10	May 2019
14.	Explain the operation of asynchronous DRAM.	10	Nov 2019

UNIT – 6 [Processors and Pipelining]			
1.	Compare CISC verses RISC	5	Dec 2016/ Dec 2018/Nov 2019
2.	Explain VLIW architecture	10	Dec 2016/Dec2018/ May 2019/ Nov 2019
3.	Describe arithmetic, instruction and processor pipelining.	10	Dec 2016/ May 2018
4.	With neat diagram explain multicore architecture	10	Dec 2017/Nov 2019
5.	Compare super scalar versus VLIW	5	Dec 2017/ May 2018
6.	Explain Non-linear pipeline processor	5	Dec 2017
7.	Explain: a. CISC scalar processor b. RISC scalar processor	10	May 2018
8.	a) Explain super scalar processor. b) List the advantages of multi-core architecture.	10	Dec 2018
9.	Explain superscalar processor.	5	May 2019

Sl No.	Questions	Marks	Year
UNIT – 1 [Databases and Data Base Users]			
1.	Explain 3 level schema architecture of database system	5	Dec 2016/ Dec 2017
2.	Define database. List the important characteristics of database approaches	5/10	Dec 2017/Dec2018/ May 2019/ Nov 2019
3.	Explain the actors on the scene and workers behind the scene	10	Dec 2016/May 2019
4.	Define the following: Data Model, Database Schema, DML, DCL, DDL	10	Dec 2016/Dec 2018
5.	What are the responsibilities of DBA and database designers	5	May 2017
6.	Define: a. Logical data independence b. Physical data independence Differentiate between logical and physical data independence.	5	May 2017/Dec 2018
	OR		
	Define Data Independence. Explain different types of it.	5	Nov 2019
7.	Explain the different types of end-users	5	Dec 2017/ May 2018/Nov 2019
8.	List and explain the advantages of DBMS approach	10	Dec 2017/ May 2018
9.	List the various DBMS interfaces and explain each	5	May 2018
10.	Explain the DBMS component modules. (DBMS system environment)	10	Dec 2018
11	Define Database. List the responsibilities of Database administrator.	5	Nov 2019
UNIT – 2 [Data Modelling Using the Entity-Relationship(ER) Model]			
1.	Design E-R diagram for company database using suitable entity relationship	10	Dec 2016/ May2017/ Dec 2018/ May 2019
	Identify the entities, relationships and develop an E-R diagram for a company database.	10	Nov 2019
2.	Explain different types of entity and attributes with examples	10	Dec 2016
3.	List the various notations used for E-R diagram	5	May 2017/ May 2018
4.	Describe the following terms: Simple attribute, Composite attribute, Multi-valued attribute, Derived attribute, Key attribute Define the following terms with example.	10	May 2017/ Dec 2017
	Entity, Entity set, Composite attribute, Multi-valued attribute, Derived attribute, Single-valued attribute, Cardinality ratio, Tuple	10	Dec 2018/May 2019
5.	Identify the entities, relationships and develop an E-R diagram for the company database	10	Dec 2017
6.	Explain different phases of database design with neat diagram	10	Dec 2017/ May 2018/Nov 2019
7.	List and explain the different types of attributes	5	May 2018
8.	Explain different cardinality ratios for binary relationship types.	5	May 2019
9.	Define following terms: (a) Domain (b)Attribute (c)Relation schema (d)Super key (e)Primary key OR	5	May 2019
	Define following terms: (a) Domain (b)Attribute (c)Tuple (d)Relation Schema (e)Relation	10	Nov 2019

DATABASE MANAGEMENT SYSTEM [15CS33T]

UNIT – 3 [Relational Data Model and Relational Data Base Constraints]			
1.	Define: a. Entity Integrity b. Referential Integrity constraints	5	Dec 2016/ May 2017/Dec 2018
2.	Explain insert, delete operations with examples in Relational Model	10	Dec 2016/Dec 2018
3.	Classify the constraints on databases and give example for each of them	5/10	May 2017/ May 2018/May 2019
4.	Explain the following term with example: Domain, Attribute, Tuple, Relation Schema(R), Relation(r)	10	May 2017/ Dec 2017/ May 2018
5.	Explain the characteristics of relations	5	Dec 2017/Nov 2019
6.	Explain with example different constraints violated during update operation	5	Dec 2017

DATABASE MANAGEMENT SYSTEM [15CS33T]

	Explain with example different constraints violated during delete and update operation	10	May 2019
7.	What is constraint? Explain with example the different constraints that are violated during INSERT, UPDATE and DELETE operations	10	May 2018/Dec 2018
8.	Explain UPDATE and INSERT command with examples.	5	Dec 2018
9.	Explain UPDATE and ALTER command with example.	5	May 2019
10.	Explain key constraint with an example.	5	Nov 2019
UNIT – 4 [SQL: Schema Definition, constraints, queries and views]			
1.	Explain CREATE and ALTER command with examples	5	Dec 2016
2.	Illustrate view with examples	5	Dec 2016
	Define view:How to create it?Give example.	5	May 2019
3.	List and explain the different aggregate functions available in SQL with examples	5/10	Dec 2016/ May 2017/ Dec 2017/ May 2018/May 2019
4.	Describe SQL statement SELECT with all clauses	10	Dec 2016
5.	Explain with example different constraints violated during delete and update operation	10	May 2019
6.	What is constraint? Explain with example the different constraints that are violated during INSERT, UPDATE and DELETE operations	10	May 2018/Dec 2018
7.	Explain UPDATE and INSERT command with examples.	5	Dec 2018
8.	Explain UPDATE and ALTER command with example.	5	May 2019
9.	List the different data types supported by SQL	5	May 2017/ Dec 2017/May 2019/Nov 2019
10.	Explain the following with example: Create, Insert, Delete, Group by, Order by, Where, Update, Having, Distinct OR Explain the following commands with example: (i) Insert (ii) Delete (iii) Order by (iv) Group by (v) Drop	10 10	May 2017/ Dec 2017/ May 2018/May 2019 Nov 2019
11.	Define view. How to create it? Give example	5	Dec 2017/Dec 2018/Nov 2019
12.	Write a note on CREATE and DROP command with example	5	May 2018

DATABASE MANAGEMENT SYSTEM [15CS33T]

13.	Consider suitable schema and write SQL queries: DEPARTMENT (Dno, Dname, Loc) EMPLOYEE (Empno, Ename, Dno, Salary) a. Retrieve sum of salaries of all employees and find the maximum and minimum salary of employee b. Retrieve the name and address of all employees who work for 'Research' dept. c. Retrieve the number of employees in Maintenance Dept d. Retrieve the names of employees who have no dependent e. Retrieve all employees in department 5 and whose salary is between 15000 and 30000 f. Retrieve the names of all employees who belongs to 'CS' department	10	Dec 2016/ May 2017/ May 2018
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DATABASE MANAGEMENT SYSTEM [15CS33T]

	<p>g. Find the sum of salaries of all employees</p> <p>h. Retrieve the total No. Of employees in each department</p> <p>i. Create view that has employee number, employee name and salary of employee table</p>		
14.	<p>Consider suitable schema and write SQL queries: DEPARTMENT (Dno, Dname, MGRSSN) EMPLOYEE (Fname,Lname,SSN,Address, Bdate, Dno, Salary)</p> <p>a. Retrieve the DOB and address of employee whose name is Mahesh.</p> <p>b. Retrieve distinct salary of all employees.</p> <p>c. Retrieve the total number of employees in the company.</p> <p>d. For each department, retrieve the department number, no. of employers in the department and their average salary.</p> <p>e. Find the sum of salaries of all employees, maximum salary, minimum salary and average salary.</p>	10	Dec 2018
15.	<p>Consider suitable schema and write SQL queries: DEPARTMENT (Dname, Dnumber,Mgr_ssn,Mgr_start_date) EMPLOYEE (Fname,Minit,Lname,SSN,Address, Bdate,sex, Salary,Super_Ssn,Dno)</p> <p>(i) Retrieve the First & last name of all employees who works in CS dept.</p> <p>(ii)Find the Sum of the Salaries of all employees.</p> <p>(iii)Sort the tuples of EMPLOYEE table by First name.</p> <p>(iv) Retrieve the details of employees who are working for Dno 2 and drawing salary more than or equal to 15000</p> <p>(v) Retrieve the total no.of employees in each department.</p>	10	Nov 2019
UNIT – 5 [Functional Dependencies and normalization for relational databases]			
1.	Explain functional dependencies	5	Dec 2016
2.	Illustrate second normal form and BCNF with examples	10	Dec 2016/ Dec 2017/ May 2018/Dec 2018
	Illustrate first normal form with examples.	5	Dec 2018
	Discuss second normal form with an example.	5	May 2019/Nov 2019
	Explain First Normal form and Third normal form with example.	10	Nov 2019
3.	Write informal design guidelines for relation schema	10	Dec 2016/ May 2017/ Dec 2017/ May 2018/Dec2018/ May 2019/Nov 2019
4.	Explain third normal form with an example	5	May 2017/ Dec 2017
5.	Explain the different UPDATE anomalies of tables	5/10	May 2017/May 2019
6.	What is Data independence and explain its types	5	May 2018
7.	What is normalization? Explain the different UPDATE anomalies tables	10	May 2018

DATABASE MANAGEMENT SYSTEM [15CS33T]**UNIT – 6 [Fundamentals of Data Base Transaction Processing]**

1.	What is transaction . Explain properties of transaction. Explain the Desirable properties of a transaction.	5 5	Dec 2016/ May 2017/ May 2018/May 2019 Nov 2019
2.	Explain the advantages of distributes computing	5	Dec 2016
3.	Draw a state transaction diagram of transaction and explain each state	10	Dec 2016/ May 2017/ Dec 2017/May 2019
4.	Discuss the advantages and disadvantages of distributed computing.	10	May 2017/Dec 2018/Nov 2019
5.	Explain the categories of NoSQL.	10	Dec 2017/May 2019/Nov 2019
6.	Bring out the advantages and disadvantages of NoSQL	5	May 2018
7.	Explain any five types of failures.	10	May 2018
8.	Write a note on system log.	5	Dec 2018
9.	Explain the need for concurrency control.	10	Dec 2018
10.	Explain column store and row store with examples.	10	Dec 2018

DATABASE MANAGEMENT SYSTEM [15CS33T]

No.	Questions	Marks	Year
UNIT – 1 [Introduction to Data Communication]			
1.	Describe the different types of data flow.	5	Dec 2016/ May 2017/ Dec 2017
2.	Explain briefly the components of data communication with diagram	10	Dec 2016/ May 2017/ Dec 2017/ May 2018/ Dec 2018/ May 2019/ Nov 2019
3.	Explain the different categories of networks	10	May 2018/Dec 2018
4.	Define the following terms: (a) Data communication (b) Phase (c) Wave length (d) Band width (e) Throughput	5	May 2019
	Define the following terms: (a)Data communication (b)Bandwidth (c)Throughput (d)Jitter (e) Bit rate	5	Nov 2019
UNIT – 2 [Introduction to Networking and Topologies]			
1.	Explain the need of networking	5	Dec 2016
2.	Explain OSI reference model with neat diagram	10	Dec 2016/ May 2017/ Dec 2017/ May 2018/ Dec 2018/ May 2019
3.	Explain with neat diagram Star and Bus topology	5	May 2017
4.	List different network topologies. Explain with diagram any one topology or star topology	5	Dec 2017/ May 2018
	List different network topologies. Explain with diagram Ring topology and star topology.	5/10	May 2019/Nov 2019
5.	Compare Bus and Ring topologies with neat diagram.	10	Dec 2018
6.	Explain TCP/IP reference model.	5	Nov 2019
UNIT – 3 [Error Detection and Correction]			
1.	Illustrate with example different types of errors	5	Dec 2016/ May 2017/ Dec 2017/ May 2018/Dec 2018/Nov 2019
2.	Discuss controlled access methods	10	Dec 2016/ Dec 2017/May 2019
3.	Explain with a diagram and an example, the process of error detection using block coding method	10	Dec 2016/ May 2017
4.	Explain briefly CSMA protocol	10	May 2017/Dec 2018
5.	Explain the design of CRC encoder and decoder, with diagram. With a diagram and example, explain the structure of Encoder and Decoder in error correction.	10	Dec 2017/ May 2018/May 2019/Nov 2019
6.	Define the terms: Burst error, Redundancy, forward error correction.	5	Dec 2018
7.	Mention some standards of CRC polynomials.	5	Dec 2018

DATABASE MANAGEMENT SYSTEM [15CS33T]

8.	Write a note on: a. CSMA/CD b. Pooling	10	May 2018
9.	Explain the terms: (a) Error detection (b) Error correction (c) Redundancy (d) Forward error correction (e) Re-transmission	5	May 2019
10.	Explain briefly Polling.	5	Nov 2019

UNIT – 4 [LAN Components and Protocols]

1.	Explain multimode transmission of optical fibre	5	Dec 2016
2.	Explain the role of NIC	5	Dec 2016/ May 2019/Nov 2019
3.	Describe the Token Ring data frame format	10	Dec 2016/May 2019
4.	Explain with diagram Repeaters and Hubs	10	Dec 2016/May 2019/Nov 2019
5.	Explain HTTP and FTP and SMTP higher layer protocols	5/10	Dec 2016/ May 2017/ May 2018/Dec 2018/Nov 2019
6.	Explain twisted pair cable with neat diagram Explain different types of twisted pair cables.	5 10	May 2017 Dec 2018
7.	Explain token ring data frame format	5	May 2017/ Dec 2017
8.	Describe WLAN with neat diagram	10	May 2017/ Dec 2017
9.	Explain ARC net and its data frame format	5/10	May 2017/ Dec 2017/ May 2018/May 2019/Nov 2019
10.	Explain coaxial cable with diagram	5	Dec 2017/ May 2018/Dec 2018
11.	Explain with a diagram HUB, Switch	10	Dec 2017
12.	List the benefits of WLAN verses conventional LAN	5	May 2018
13.	Explain FDDI Lower Layer Protocol	10	May 2018/Nov 2019
14.	Explain TCP/IP middle layer protocol	5	May 2018
15.	List the LAN connectors used for twisted pair, coaxial and optical fibre cables.	5	Dec 2018
16.	Compare the functions of hub and repeater.	10	Dec 2018
17.	Compare SMTP with POP.	10	May 2019
18.	Explain single mode transmission of optical fibre.	5	Nov 2019

UNIT – 5 [Network Addressing]			
1.	Explain the components of an IP address	5	Dec 2016/ Dec 2017/Dec 2018
2.	Explain the features of IP address of classes	10	Dec 2016/ May 2017/ Dec 2017/ May 2018/Nov 2019
3.	Explain the process of dividing a network into subnets	10	May 2017/Dec 2018
4.	Write a note on IPv6	5	May 2018
5.	Explain the limitations of IP address classes.	5	May 2019
6.	List and explain different IP address classes.	10	May 2019
7.	Discuss different sub netting considerations.	5	Nov 2019
UNIT – 6 [Wide Area Networks]			
1.	Explain the working of ISDN	5	Dec 2016/ May 2017
2.	Explain the advantages and disadvantages of leased lines	5	Dec 2016/May 2019
3.	Discuss frame relay protocol	5	Dec 2016/ Dec 2017/ May 2019
4.	Illustrate the working of VPN with neat diagram	10	Dec 2016/ May 2017
5.	Discuss PPP and X-25 protocols	10	Dec 2016/ May 2018/Dec2018/ May 2019
6.	Describe different types of Gateways	10	May 2017/ May 2018/Nov 2019
7.	Explain briefly transparent bridge	10	May 2017/Nov 2019
8.	Differentiate between LAN and WAN technologies	5	Dec 2017/Dec 2018
9.	Describe components of VSAT network and access technology.	10	Dec 2017/ May 2018/ Dec 2018/ May2019/ Nov 2019
	Describe the components of VSAT network.	5	
10.	Explain briefly Source Route Bridge	10	Dec 2017/Dec 2018
11.	Illustrate the working of DHCP with diagram	10	Dec 2017
12.	Describe the content of routing table	5	May 2018/ Nov 2019
13.	Compare the features of Radio and Infrared waves	10	May 2018
14.	Explain briefly Routing protocols.	5	May 2019
15.	Illustrate the working of DNS with a diagram.	10	Nov 2019

