MIZORAM BOARD OF SCHOOL EDUCATION
AIZAWL : 796012

Dated Aizawl, the 31st May, 2021

N O T I F I C A T I O N

No.J.11012/1/2018-MBSE(Acad)/60: In pursuance of the resolution no SC:82:2019:03 of the meeting of the Syllabus Committee of the Board held on 8th, November, 2019 it is hereby notified for the information all concerned that the new syllabi of Class 12 Computer Science and Class 12 Home Science which has been implemented w.e.f. the 2021-2022 academic session are reduced by 30% from the existing course.

Further, slight modification is made in the Reduced Syllabus & Scheme of Examinations and Question Design published by the Board in its Notification vide No.J.11016/1/2018-MBSE(Acad)/16 dt. 07.08.2020 in the following subjects;

1. Computer Science (Class 11)
2. Mathematics (Class 12)
3. Science (Class 10)

The Reduced Syllabus & Scheme of Examinations and Question Design is also replaced with the corrected version in the Board's official website www.mbse.edu.in.

Sd/- LALTHANGBIKA
Secretary
Mizoram Board of School Education

Memo No. J.11012/1/2018-MBSE(Acad)/60 (A) : Dated Aizawl, the 31st May, 2021

Copy to :

1. The Special Secretary to the Govt. of Mizoram, School Education Department and Controlling Authority of the MBSE, Aizawl.
2. The Director, School Education Department, Govt. of Mizoram, Aizawl.
3. The Principal, Institute of Advanced Study in Education, Aizawl.
4. The Controller of Examinations, MBSE.
5. Regional Officer, MBSE Regional Office, Lunglei.
6. All District Education Officers, Govt. of Mizoram, for information, with a request to circulate to all Secondary Schools and Higher Secondary Schools under their jurisdiction.
7. System Administrator MBSE, for uploading in the official website.
8. All others concerned.
9. Guard File – I.

slpachuau 31/5/21
(SARAH LALENGZAMI PACHUAU)
Director (Academic)
Mizoram Board of School Education

COMPUTER SCIENCE
CLASS-11
THEORY: 70 MARKS

Learning Outcomes:

- Ability to understand and apply basic computational thinking.
- Ability to understand the notion of data types and data structures andapply in different situations.
- Ability to appreciate the notion of an algorithm and apply its structureincluding how algorithms handle corner cases.
- Ability to develop a basic understanding of computer systems -architecture, operating system, mobile and cloud computing.
- Ability to work in the cyber world with understanding of cyber ethics,cyber safety and cybercrime.
- Ability to make use the value of technology in societies, gender anddisability issues and the technology behind biometric ids.

Distribution of Marks

Unit	Unit Name	Theory Marks
I	Computer Systems and Organization	10
II	Computational Thinking and Programming -1	45
III	Society, Law and Ethics	15
	Total	**70**

Unit-Wise Syllabus

Unit I: Computer Systems and Organization 10 Marks

- Basic computer organization: description of a computer system and mobile system, CPU,memory, hard disk, I/O, battery.
- Types of software: Application software, System software and Utility software.
- Memory Units: bit, byte, MB, GB, TB, and PB.
- Number System: numbers in base 2, 8, 16 and binary addition.
- Concept of Compiler and Interpreter
- Operating System (OS) - need for an operating system, brief introduction to functions ofOS, user interface.

Unit II: Computational Thinking and Programming – 1 45 Marks

- Familiarization with the basics of Python programming: a simple “hello world" program, the process of writing a program (Interactive & Script mode), running it and printstatements; simple data-types: integer, float and string.
- Features of Python, Python Character Set, Token & Identifiers, Keywords, Literals,Delimiters, Operators.
- **Comments**: (Single line & Multiline/ Continuation statements), Clarity & Simplificationof expression.

- Introduce the notion of a variable and methods to manipulate it (concept ofL-value and R-value even if not taught explicitly).
- **Knowledge of data types and operators:** accepting input from the console,assignment statement, expressions, operators and their precedence.
- **Operators & types**: Binary Operators-Arithmetic, Relational Operators, LogicalOperators, Augmented Assignment Operators.
- Execution of a program, errors- syntax error, run-time error and logical error.
- **Conditional statements**: if, if-else, if-elif-else; simple programs: e.g.:absolute value, sort 3 numbers and divisibility of a number.
- **Notion of iterative computation and control flow:** for(range(),len()), while,
- **Strings**: Traversal, operations – concatenation, repetition, membership;functions/methods–len(), capitalize(), title(), upper(), lower(), count(), find(),index(), isalnum(), islower(), isupper(), isspace(), isalpha(), isdigit(), split(),partition(), strip(), lstrip(), rstrip(), replace(); String slicing.
- **Lists**: Definition, Creation of a list, Traversal of a list. Operations on a list - concatenation, repetition, membership; functions/methods–len(), list(),append(), extend(), insert(), count(), index(), remove(), pop(), reverse(), sort(),min(), max(), sum(); Lists Slicing; Nested lists; finding the maximum, minimum,mean of numeric values stored in a list; linear search on list of numbers andcounting the frequency of elements in a list.
- **Tuples**: Definition, Creation of a Tuple, Traversal of a tuple. Operations on a tuple - concatenation, repetition, membership; functions/methods –len(), tuple(), count(), index(),sorted(), min(), max(), sum(); Nested tuple; Tuple slicing; finding the minimum,maximum, mean of values stored in a tuple; linear search on a tuple of numbers, countingthe frequency of elements in a tuple.
- **Dictionary**: Definition, Creation, Accessing elements of a dictionary, add an item, modifyan item in a dictionary; Traversal, functions/methods – len(), dict(), keys(), values(),items(), get(), update(), del(), del, clear(), fromkeys(), copy(), pop(), popitem(),setdefault(), max(), min(), count(), sorted() copy(); Suggested programs : count thenumber of times a character appears in a given string using a dictionary, create adictionary with names of employees, their salary and access them.
- **Introduction to Python modules:** Importing math module (pi, e, sqrt, ceil, floor, pow,fabs, sin, cos, tan); random module (random, randint, randrange).
- **Sorting algorithm**: bubble and insertion sort; count the number of operations while sorting.

Unit III: Society, Law and Ethics **15 Marks**

- **Cyber safety**: safely browsing the web, identity protection, confidentiality, socialnetworks, cyber trolls and bullying.
- **Appropriate usage of social networks**: spread of rumours, and common socialnetworking sites (Twitter, LinkedIn, and Facebook) and specific usage rules.
- **Safely accessing web sites**: adware, malware, viruses, Trojans
- **Safely communicating data**: secure connections, eavesdropping, phishing and identityverification.

- **Privacy laws, fraud**; cyber-crime- phishing, illegal downloads, child pornography, scams; cyber forensics, IT Act, 2000.

SUBJECT: COMPUTER SCIENCE (DELETED) CLASS: 11

Units	Topic/Portion deleted
Unit I: Computer Systems and Organization	• Encoding Schemes: UTF8, UTF32 • Concept of cloud computing and cloud services (SaaS,IaaS,PaaS),cloud (public/private),Blockchain technology • Boolean logic: NOT, AND, OR, NAND, NOR, XOR, NOT, truthtables andDe Morgan's laws, Logic circuits • Encoding Schemes: ASCII, ISCII and Unicode
Unit II: Computational Thinking and Programming - 1	Introduction to Problem solving: Problem solving cycle - Analyzing a problem, designing algorithms and representation of algorithm using flowchart and pseudo-code. Decomposition – concept, need for decomposing a problem, examples of problem-solving using decomposition. • using flowcharts, suggested programs: calculation of simple andcompound interests, finding the factorial of a positive number etc. Suggested Practical List Input a list of elements, sort in ascending/ descending order using Bubble/ Insertion sort
Unit-III: Society, Law and Ethics	• Intellectual property rights, plagiarism, digital rights management, andlicensing (Creative Commons, GPL and Apache), open source, opendata, privacy.Technology and society: • understanding of societal issues and cultural changes induced bytechnology. • E-waste management: proper disposal of used electronic gadgets. • Identity theft, unique ids and biometrics. • Gender and disability issues while teaching and using computers.

Weightage to Objectives of Learning

SlNo.	Learning Objectives	Marks	Percentage
1	**Knowledge:** Knowledge based simple recall questions, terms, concepts, principles, theorem, identify, define, list, name, etc.	21	30%
2	**Understanding:** Comprehension – to be familiar with meaning and to understand, conceptually, interpret, explain, illustrate, summarize, convert, etc.	21	30%
3	**Application:** Use of abstract information in concrete situation, use given content to interpret a solution, provide an example, solve, apply, build, develop, utilize, etc.	14	20%
4	**Higher Order Thinking Skills (HOTS)** Analysis and synthesis – classify, compare, contract, differentiate between different pieces of information, categorize, simplify, etc.	14	20%

Weightage to Form of Questions:

SlNo.	Form of Questions	No. of Questions	Marks for each question	Total Marks
1	Objective Type	14	1	14
2	Short Answer	13	2	26
3	Long Answer	10	3	30
	Total	**37**		**70**

Weightage to difficulty level of questions

SlNo.	Level of Questions	Percentage
1	Easy	30%
2	Average	50%
3	Difficult	20%

Scheme of Options (Theory Question):

1. There shall be no overall choice.
2. Internal choices (either/ or type) on a very selective basis may be given in sevenquestions. This internal choice may be given in any four questions of 2 marks,any three questions of 3 marks weightage.
3. The alternate questions given by way of choice should be based on the sameobjective and the same unit. It should have the same anticipated difficulty leveland length of answer, as far as practicable.

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SAMPLE BLUE-PRINT

Subject: Computer Science **Class: XI** **Paper: Theory**

Unit	Forms of Questions/Topics	Knowledge			Understanding			Application			HOTS			Total
		Obj	SA	LA	Obj	SA	LA	Obj	SA	LA	Obj	SA	LA	
1	Computer System and Organization	1(1)	2(1)		1(1)				2(1)		1(1)		3(1)	**10(6)**
2	Computational Thinking and Programming.	3(3)	6(3)	6(2)	2(2)	4(2)	6(2)	1(1)	2(1)	6(2)	1(1)	2(1)	6(2)	**45(22)**
3	Society Law and Ethics	1(1)	2(1)		1(1)	4(2)	3(1)	1(1)	2(1)		1(1)			**15(9)**
Sub Total		5(5)	10(5)	6(2)	4(4)	8(4)	9(3)	2(2)	6(3)	6(2)	3(3)	2(1)	9(3)	**70(37)**
Total		**21(12)**			**21(11)**			**14(7)**			**14(7)**			

COMPUTER SCIENCE
CLASS XI
PRACTICAL: 10 MARKS

SUBJECT: Computer Science (Practical) **Maximum marks: 10**
No. of paper: 1(One) **Time: 3 hours**

There must be three sets of questions for practical in Python programming. Students have tochoose one set of question and tested in computer during examination.

SlNo.	Unit Name	Total Marks
1	Programming in Python: Logic	5
	Programming in Python: Output presentations	3
2	Viva Voce	2

Scheme of Options (Practical Question):

The practical question pattern and scheme of options will be as given below:

1. (a) Question from Python Programming **(8 Marks)**

   OR

   (b) Question from Python Programming **(8 Marks)**
2. Viva Voce **(2 Marks)**

Total:10 Marks

Selected Lists of Practical for Python Programming:

1. Program to obtain length and breadth of a rectangle and print its area.
2. Write a program to enter two integers and print the sum, minus, multiplication and division.
3. Write a program to calculate simple interest where principal amount, rate of interest and time in years are input by the user.
4. Write a program to generate 4-digit random OTP code between 1000 to 9999.
5. Write a program that takes the name and age and display a message whether the user is eligible to apply for driving license or not. The eligibility age is 18.
6. Program to accept three integers and print the largest number.
7. Program to calculate the factorial of any number input by the user.
8. Write a program to print the Fibonacci numbers.
9. Write a program to find the sum of the series $x^1 + x^2 + x^3 \ldots + x^n$ where x and n are input by the user.
10. Write a program to reverse a string input by the user and also display the number of characters including spaces.
11. Write a program to input a string and display if it is palindrome or not.
12. Create a list program based on the following description.
    (a) Create a simple list L1 containing numbers 1 to 10.
    (b) Slice out all odd numbers as list L2 and all even numbers as list L3.
    (c) Create another list L4 by combining L2 and L3.
    (d) Display all the list you created so far from L1 to L4.
    (e) Sort the list L4 in ascending order and display it.

13. Implement a list in python based on the following specifications
    (a) Create two lists: 'Names' containing five names and 'Marks' containing five marks.
    (b) Create a two-dimensional list 'Students' by appending 'Names' and 'Marks'.
    (c) Change the mark of last student to 77 in the students list.
    (d) Display the only the name of the first student from student list.
    (e) Display the lowest marks, highest marks and sum of all the marks using Student list.
14. Write a program to take mark obtained in 5 subjects as a tuple. Display the marks in sorted order, total, and average calculated based on the following

    avg >= 75, A grade
    avg >= 60, B grade
    avg >= 50, C grade
    < 50, D grade
15. A tuple T1 is already containing a student RollNo and Name. Create another tuple T2 to store mark obtained in five different subject input by the user. Create a nested tuple T3 using T1 and T2. Calculate and display the lowest, highest and sum of the marks using T3.
16. Write a program to implement phonebook where user can enter name and phone number as much as they want which are stored as dictionary. After that, a name is entered and the program will search and if found, the phone number will be display or else appropriate message will be display.
17. Create a dictionary called result containing name as key and mark as value. The user can input as many students as he/she wants. Then the system will display result in alphabetical order of students' name.

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COMPUTER SCIENCE
CLASS XII
THEORY: 70 MARKS

Pre-requisites

Computer Science – Class XI

Learning Outcomes

Student should be able to

- apply the concept of function and recursion.
- create and use Python libraries.
- explain and use the concept of file handling.
- explain basics of data communication and computer networks.
- use Database concepts and SQL commands.

Distribution of Marks

Unit	Name of Unit	Marks
I	Computational Thinking and Programming – 2	40
II	Communication and Network Concepts	10
III	Database Management	20
	Total	**70**

Unit-Wise Syllabus

Unit I: Computational Thinking and Programming – 2 40 Marks

● **Revision:**Revision of Python topics covered in Class XI.

● **Functions:** types of function (built-in functions, functions defined in module, user definedfunctions), creating user defined function, arguments and parameters, default parameters,positional parameters, function returning value(s), flow of execution, scope of a variable(global scope, local scope)

● **File Handling:** Introduction to files, types of files (Text file, Binary file, CSV file),relative and absolute paths. Text file: opening a text file, text file open modes (r, r+, w, w+, a,a+), closing a text file,opening a file using with clause, writing/appending data to a text fileusing write() andwritelines(), reading from a text file using read(), readline() and readlines(),seek and tellmethods, manipulation of data in a text file. Binary file: basic operations on abinary file: open using file open modes (rb, rb+, wb, wb+,ab, ab+), close a binary file, importpickle module, dump() and load() method, read,write/create, search, append and updateoperations in a binary file. CSV file: import csv module, open / close csv file, write into a csvfile using csv.writerow(), and read from a csv file using csv.reader( )

● **Python libraries**: creating python libraries

● **Recursion**: simple programs with recursion: sum of first n natural numbers, factorial,Fibonacci series

Unit II: Communication and Network Concepts **10 Marks**

● Evolution of networking: introduction to computer networks, evolution of networking (ARPANET, NSFNET, INTERNET)

● Data communication terminologies: concept of communication, components of datacommunication (sender, receiver, message, communication media, protocols), measuringcapacity of communication media (bandwidth, data transfer rate), IP address, switchingtechniques (Circuit switching, Packet switching)

● Transmission media: Wired communication media (Twisted pair cable, Co-axial cable, Fiber-optic cable), Wireless media (Radio waves, Micro waves, Infrared waves)

● Network devices (Modem, Ethernet card, RJ45, Repeater, Hub, Switch, Router, Gateway, WIFI card)

● Network topologies and Network types: types of networks (PAN, LAN, MAN, WAN), networking topologies (Bus, Star, Tree)

● Network protocol: HTTP, FTP, PPP, SMTP, TCP/IP, POP3, HTTPS, TELNET, VoIP, wireless/mobile communication protocol such as GSM, GPRS and WLL

● Mobile telecommunication technologies: 1G, 2G, 3G, 4G and 5G

● Introduction to web services: WWW, Hyper Text Markup Language (HTML), Extensible Markup Language (XML), domain names, URL, website, web browser, web servers, web hosting

Unit III: Database Management **20 Marks**

● Database concepts: introduction to database concepts and its need

● Relational data model: relation, attribute, tuple, domain, degree, cardinality, keys(candidate key, primary key, alternate key, foreign key)

● Structured Query Language: introduction, Data Definition Language and DataManipulation Language, data type (char(n), varchar(n), int, float, date), constraints (notnull,unique, primary key), create database, use database, show databases, dropdatabase, showtables, create table, describe table, alter table (add and remove anattribute, add and removeprimary key), drop table, insert, delete, select, operators(mathematical, relational andlogical), aliasing, distinct clause, where clause, in, between,order by, meaning of null, is null,is not null, like, update command, delete command,aggregate functions (max, min, avg, sum,count)

SUBJECT: COMPUTER SCIENCE (DELETED) **CLASS: 12**

Unit	Topics / Portion deleted
Unit – I	**Idea of efficiency**: number of comparisons in Best, Worst and Average case for linear search **Data Structure**: Stack, operations on stack (push & pop), implementation of stack using list. Introduction to queue, operations on queue (enqueue, dequeue, is empty, peek, is full), implementation of queue using list.
Unit - III	**Group by**, having clause, joins:cartesian product on two tables, equi-join and natural join Interface of python with an SQL database: connecting SQL with Python, performing insert,update, delete queries using cursor, display data by using fetchone(), fetchall(), rowcount,creating database connectivity applications.

Weightage to Objectives of Learning

SlNo.	Learning Objectives	Marks	Percentage
1	**Knowledge:** Knowledge based simple recall questions, terms, concepts, principles, theorem, identify, define, list, name, etc.	21	30%
2	**Understanding:** Comprehension – to be familiar with meaning and to understand, conceptually, interpret, explain, illustrate, summarize, convert, etc.	21	30%
3	**Application:** Use of abstract information in concrete situation, use given content to interpret a solution, provide an example, solve, apply, build, develop, utilize, etc.	14	20%
4	**Higher Order Thinking Skills (HOTS)** Analysis and synthesis – classify, compare, contract, differentiate between different pieces of information, categorize, simplify, etc.	14	20%

Weightage to Form of Questions:

SlNo.	Form of Questions	No. of Questions	Marks for each question	Total Marks
1	Objective Type	14	1	14
2	Short Answer	13	2	26
3	Long Answer	10	3	30
	Total	**37**		**70**

Weightage to difficulty level of questions

SlNo.	Level of Questions	Percentage
1	Easy	30%
2	Average	50%
3	Difficult	20%

Scheme of Options (Theory Question):

1. There shall be no overall choice.
2. Internal choices (either/ or type) on a very selective basis may be given in sevenquestions. This internal choice may be given in any four questions of 2 marks,any three questions of 3 marks weightage.
3. The alternate questions given by way of choice should be based on the sameobjective and the same unit. It should have the same anticipated difficulty leveland length of answer, as far as practicable.

5. SAMPLE BLUE – PRINTS

Sample Blue Print – 1

Unit	Forms of Questions/Topics	Knowledge			Understanding			Application			HOTS			Total
		Obj	SA	LA	Obj	SA	LA	Obj	SA	LA	Obj	SA	LA	
1	Computational Thinking & Programming - 2	2(2)	4(2)	6(2)	2(2)	4(2)	6(2)	2(2)	2(1)	6(2)	1(1)	2(1)	3(1)	**40(20)**
2	Computer Networks	1(1)	2(1)		1(1)		3(1)	1(1)				2(1)		**10(6)**
3	Database Management	1(1)	2(1)	3(1)	1(1)	4(2)		1(1)	2(1)		1(1)	2(1)	3(1)	**20(11)**
Sub Total		3(4)	8(4)	9(3)	4(4)	8(4)	9(3)	4(4)	4(2)	6(2)	2(2)	6(3)	6(2)	**70(37)**
Total		**21(11)**			**21(11)**			**14(8)**			**14(7)**			

Sample Blue Print – 2

Unit	Forms of Questions/Topics	Knowledge			Understanding			Application			HOTS			Total
		Obj	SA	LA	Obj	SA	LA	Obj	SA	LA	Obj	SA	LA	
1	Computational Thinking & Programming - 2	3(3)	2(1)	6(2)	2(2)	4(2)	6(2)	1(1)	4(2)	3(1)	2(2)	4(2)	3(1)	**40(21)**
2	Computer Networks	1(1)		3(1)	1(1)	2(1)					1(1)	2(1)		**10(6)**
3	Database Management	1(1)	2(1)	3(1)	1(1)	2(1)	3(1)	1(1)	2(1)	3(1)		2(1)		**20(10)**
Sub Total		5(5)	4(2)	12(4)	4(4)	8(4)	9(3)	2(2)	6(3)	6(2)	3(3)	8(4)	3(1)	**70(37)**
Total		**21(11)**			**21(11)**			**14(7)**			**14(8)**			

COMPUTER SCIENCE
CLASS XII
PRACTICAL: 10 MARKS

SUBJECT: Computer Science (Practical) **Maximum marks: 10**
No. of paper: 1(One) **Time: 3 hours**

SlNo.	Unit Name	Total Marks
1	Python Programming	5
	SQL Queries	3
2	Viva Voce	2

Scheme of Options (Practical Question):

2. There shall be no overall choice.
3. The practical question pattern and scheme of options will be as given below:
    1. (a) Question from Python Programming **(5 Marks)**
    OR
    (b) Question from Python Programming **(5 Marks)**
    2. Question from MySQL **(3 Marks)**
    3. Viva Voce **(2 Marks)**

Total:10 Marks

SELECTED LISTS OF PRACTICALS

A. Python

(1) Write a python script to take input for a number and print its multiplication table.

(2) Write a program that reads a line from keyboard and prints the number of alphabets, digits, small and capital letters.

(3) Write a program that inputs two tuples and creates a third that contains all elements of the first followed by the elements of the second.

(4) Using python, create a dictionary of at least 10 students name as key and marks as value. Display the mark obtained by asking user to enter a student name.

(5) Write a python program to sort lists of unsorted 10 numbers using bubble sort.

(6) Write python program to perform insertion sort on list of unsorted numbers.

(7) Write a function that takes one argument (a positive integer) and reports if argument is even or odd. Write a program that invokes this function.

(8) Write a recursive function that accepts two numbers as its argument and returns its power.

(9) Create a number guessing game in which a random number between 1 and 100 is generated. It will tell you whether your guess is smaller or bigger, and then show you how many times you tried to guess it correctly.

(10) Create a module in Python to define the functions: addition, subtraction, multiplication and division of two integer numbers. Write a code to import this module in your Python program.

(11) Write a program to save details of at least 5 students (RollNo, Name, Mark) into a text file. Then display each student in separate line and also display the total size of the text file.

(12) Create a binary file called phonebook.dat and store name and phone number of your friends. Search for any name and display the phone number.

(13) Write a program to create a CSV file to store five students (RollNo, Name, Mark) from user and then display the whole contents of CSV file.

(14) Write a recursive function to find the factorial of a natural number.

(15) Write a recursive function in python to implement binary search algorithm.

B. MySQL

(16) Write SQL commands for the following:

(a) Create a STUDENTS table with the following columns and constraints

RNo : Integer data type which is a primary key
Name : Text data type which cannot be empty
Class : Text data type and it cannot be null
Sex : Text data type with possible value of 'Male' or 'Female' only
DoB : Date of Birth which is DATE data type.
Fee : Float data type with default value 0

(b) Alter the STUDENTS table by changing DoB column name to Birth_Date

(c) Add a new column MARKS of TINYINT data type to STUDENTS table.

(d) INSERT or LOAD the following data into the STUDENTS table

RNo	Name	Class	Gender	Birth_Date	Fee	Marks
1	Alvin	XI	Male	2010-09-12	1000	89
2	Mark	XII	Male	2013-05-17	1200	64
3	Billy	XI	Male	2011-07-04	1000	85
4	Rosy	XII	Female	2009-03-23	1200	76
5	Cindy	XII	Female	2007-05-07	1200	91
6	Peter	XI	Male	2005-11-03	1000	69
7	Denis	XI	Male	2003-08-30	1000	83
8	Mary	XII	Female	2002-09-18	1200	77
9	Jenny	XI	Female	2008-12-01	1000	81
10	Daniel	XII	Male	2011-03-15	1200	59

(17) Based on the STUDENTS table, write SQL queries for the following:

(a) Display all students in alphabetical order of name.

(b) Display all students in Descending order of marks.

(c) Find out the minimum marks in Class XII.

(d) Find out the maximum marks scored by Class XI students.

(e) Find out the total fee paid by all students.

(f) Find out the average marks score by all male students;

(g) Display all students whose names starts with the letter 'D'

(h) Display all students whose names ends with the letter 'y';

(i) Display names of students where the second letter of their name is 'e';

(j) Display details of students whose mark is greater than or equal to 85.

(k) Display all students whose RollNo is between 3 to 7 inclusive of both numbers.

(l) Count how many male students score below 80.

(m) Display RNo, Name, Class, Age where Age is automatically calculated

from Birth_Date by subtracting current year to year of birth.

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Subject: Home Science **Class : 12**

Unit	Topic/Portion Deleted for 2021-2022 Academic Session
I	HUMAN DEVELOPMENT : LIFE SPAN APPROACH (Part –II) Chapter-3 – Challenges of old age
II	NUTRITION FOR SELF, FAMILY AND COMMUNITY Chapter-6: Modification of Diet for different age group. Chapter-9 Food Safety and quality
III	MONEY MANAGEMENT AND CONSUMER EDUCATION Chapter-11 : Savings and Investment Chapter 14 : Consumer Protection
IV	APPAREL : DESIGNING, SELECTION AND CARE Chapter 16 : Selection and Purchase of fabrics
V	COMMUNITY DEVELOPMENT AND EXTENSION (PART-II) Chapter 20 : Development of women and children in Rural Areas (DWCRA) Chapter 21 : The Mahatma Gandhi National Rural Employment Guarantee ACT (MGNREGA)
VI	CAREER OPTION AFTER HOME SCIENCE EDUCATION Chapter 22 : Careers in Home science

Weightage to content area of selected portion

Unit	Topic/portion selected for 2021-22 academic session	Marks
I	HUMAN DEVELOPMENT : LIFE SPAN APPROACH (PART-II) Chapter 1 : Understanding of adolescents Chapter 2 : Transition to Adulthood Chapter 4 : Anger Management	16
II	NUTRITION FOR SELF , FAMILY AND COMMUNITY Chapter 5 : Essentials of Meal Planning Chapter 7 : Therapeutic modification of normal Diet Chapter 8 : Therapeutic modification of normal Diet for common ailments	16

III	MONEY MANAGEMENT AND CONSUMER EDUCATION Chapter 10 : Family income and expenditure Chapter 12 : Consumer Education Chapter 13 : Consumer Aids	16
IV	APPAREL ; DESIGNING, SELECTION AND CARE Chapter 15: Application of Elements of Art and Principles of design in apparel design. Chapter 17: Factor influencing the selection of apparel Chapter 18: Care, maintenance and storage of clothes	16
V	COMMUNITY DEVELOPMENT AND EXTENSION (PART-II) Chapter 19: Water Safety	6
	Total	70

Weightage to form of questions

Sl.no	TYPE OF QUESTIONS	NO.OF QUESTIONS	MARK FOR EACH QUESTIONS	TOTAL
1.	Objective type	14	1	14
2.	Short Answer I	06	2	12
3.	Short Answer II	08	3	24
4.	Long Answer I	04	5	20
	Total	32		70

Note:-

1. Questions carrying 5 marks will be set from Unit I – IV (one questions from each unit).
2. Questions carrying 3 marks will be set from Unit I – V (at least one questions from each unit).
3. Questions carrying 2 marks will be set from Unit I – V (at least one questions from each unit).
4. Questions carrying 1 marks will be set from Unit I – V (at least one questions from each unit).

Scheme of option : There shall be no option.

SAMPLE BLUE PRINT HOME SCIENCE- XII

Form of questions/topic	Knowledge				Understanding				Application				Hots				Evaluation				Total
	Ob	SA I	SA II	LA	Ob	SA I	SA II	LA	Ob	SA I	SA II	LA	Ob	SA I	SA II	LA	Obj	SA I	SA II	LA	
UNIT: I Human development: Life Span Approach	3(3)		3(1)					5(1)						2(1)					3(1)		16(7)
UNIT : II Nutrition for self, family and community	1(1)	2(1)					3(1)		1(1)			5(1)			3(1)		1(1)				16(7)
UNIT : III Money management and consumer education	1(1)		3(1)					5(1)	1(1)		3(1)		1(1)					2(1)			16(7)
UNIT IV Apparel: Designing, selection and care	1(1)			5(1)		2(1)	3(1)		2(2)	2(1)							1(1)				16(8)
UNIT V Community development and extension (Part II)		2(1)					3(1)						1(1)								6(3)
Sub Total	6(6)	4(2)	6(2)	5(1)		2(1)	9(3)	10(2)	4(4)	2(1)	3(1)	5(1)	2(2)	2(1)	3(1)		2(2)	2(1)	3(1)		
Total	**21(11)**					**21(6)**			**14(7)**				**7(4)**				**7(4)**				**70(32)**

Note: 1. The figure in the bracket denotes the numbers of questions

2. This is only a sample blue print: The question setter may develop his/her own blue print as per the question design.

HOME SCIENCE (Practical)
Class – XII

Full Mark -10 **Time: 3 hrs** **No of paper: 1 (one)**

UNIT II: 4 Marks
4 Marks are allotted for UNIT II on Nutrition for self, family and community. Planning of meals of anyone according to specific requirements. (Pregnant women. Lactating mother, diarrhoea, fever)

UNIT III: 3 Marks
3 Marks are allotted for UNIT III on Money management and consumer education.

- Preparation of label

UNIT IV: 3 Marks
3 Marks are allotted for UNIT IV on Apparel Designing, selection and care.

(a) Mark sample of the basic stitch
1. Running stitch
2. Hemming stitch
3. Chain stitch
4. Feather stitch
5. Cross stitch
6. French Knot
7. Black stitch
8. Blanket stitch
9. Herring bone
10. Button hole stitch

Or

(b) Checking (Examining the quality of ready-made garments)

Mathematics (Class 12 Theory)

Unit IV-Vectors and three-dimensional geometry (14 Marks)

Topic/Portion Deleted

2. **Three-dimensional geometry**: The Plane (Except Exercise 28A and 28B)

Revised Syllabus

2. Three Dimensional Geometry: Direction cosines and direction ratios of a line joining two points. Cartesian equation and vector equation of a line, coplanar and skew lines, shortest distance between two lines , General equation of plane in certesian form , Equation of a plane passing through a given point , equation of the plane in the intercept form, equation of plane passing through three given points. Equation of a plane in various forms.

Science (Class 10)

Chapter 1- Light-Reflection and Refraction

Topic/Portion Deleted

Application of spherical mirrors and lenses / Numerical based on mirror & lens formula (i.e. solved numerical in page 12-17, 26-27, 37 - 41 and questions of the same type)

Topic/Portion included

Textbook page number 1-36 except numerical problems on page 12-17 and 26-27.