

**Syllabi & Courses of Study
of
Vocational Subjects
for
Class 11th (Level-3)**



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SCHEME OF EXAMINATION

Details of Assessment Plan

1. There will be two components of evaluation:
 - a) Knowledge/Theory Test
 - b) Practical Test

2. The marks allocated for each evaluation will be as under:
 - a) Knowledge/Theory Test – 50 marks
 - b) Practical Test – 50 marks

S.No.	Method of Assessment	Weightage (Max. Marks)	Minimum Pass Marks	Evaluator
1	Theory/Written Test	50	18	JKBOSE
2	Practical Test & Oral Test/Viva	50	18	JKBOSE
TOTAL		100 Marks		

PRACTICAL ASSESSMENT

EXTERNAL ASSESSMENT:

DISTRIBUTION	MARKS
Hands on Skill	15
Viva Voce	15
Written Test	10
Practical File / Student's Portfolio	10
TOTAL	50

QUESTION DISTRIBUTION

Class: 11th (Level-3)

Max. Marks: 50

Duration: 02:30 Hrs

PATTERN	MARKS	QUESTIONS	TOTAL
Very Short Questions	01	10	10 Marks
Short Type-I Questions	02	05	10 Marks
Short Type-II Questions	03	05	15 Marks
Long Type Questions	05	03	15 Marks
TOTAL		23	50 Marks

1.IT/ITeS

Job Role: Junior Software Developer

Level-3(11th)

SCHEME OF ASSESSMENT

This course is a planned sequence of instructions consisting of Units meant for developing employability and vocational competencies of students of Class 11th opting for vocational subject along with general education subjects.

The unit-wise distribution of hours and marks for Class 11th is as follows:

Class 11th			
Module Part & Name	Unit Name	No. of Hours for Theory and Practical (300)	Max. Marks Theory and Practical (100)
Part - A Employability Skills	Communication & Self-Management Skills-I	45	05
	Basic ICT, Entrepreneurship & Green Skills-I	65	05
Total		110	10
Part – B Vocational Skills	Software Construction Essentials	40	15
	Operating System and Computer Network	40	15
	Python Programming-I	60	05
	Data Structure	25	05
Total		165	40
Part - C Practical Work	Practical Examination	06	15
	Written Test	01	10
	Viva Voce	03	10
Total		10	35
Part-D Project Work /Field Visit	Practical File / Student Portfolio	10	10
	Viva Voce	05	05
Total		15	15
Total		300	100

Theory: 50 Marks

“Part – A”

Employability Skills----- (10 Marks)

Unit – I Communication Skills and Self-Management Skills-I (05 Marks)

Communication, Types of communication, Communication Styles, Greetings & Introduction. Strength and Weakness Analysis, Grooming, Personal Hygiene, Team Work, Goal Setting, Time Management.

Unit – II Basic ICT, Entrepreneurship & Green Skills-I (05 Marks)

Introduction to ICT and ITeS , Word Processing (Create, Edit, Insert, Header/Footer, Save, Close and Print a document in Word Processor).

Entrepreneur and Entrepreneurship, Values of an Entrepreneur, Coming up with a business idea, Understanding the market.

Sectors of Green Economy, Policies for a Green Economy (Green India Mission (GIM)), Stakeholders in Green Economy (Government, Non-Governmental Organizations (NGOs) & Business and Industry).

“Part – B”

Vocational Skills----- (40 Marks)

Unit–III Software Construction Essentials (15 Marks)

Introduction to Computers: Internal components of computer system, Input and output devices, Computer memory, Types of memory:- Primary memory, Cache memory and Secondary memory.

Number System: Binary, Decimal, Octal and Hexadecimal number system, Conversion: binary to decimal and decimal to binary.

Algorithms and Flowcharts: Algorithm, Why do we need an algorithm, Characteristics of an algorithm, Flowchart, Pseudo-code, Benefits of pseudo-code.

Programming Language Concepts: Steps for problem solving, Concept of a program, Need for writing programs, Concept of High level/Low level/ Assembly level programming languages. Translators:- Compiler, Interpreter and Assembler.

Unit–IV Operating System and Computer Network

(15 Marks)

Operating System: Concept of operating system, Functions of operating system, Types of operating system:- Batch operating system, Time sharing operating system, Multiprocessing operating system, Real time operating system, Distributed operating system.

Computer Networks: Introduction to computer networks, Types of networks:- Personal Area Network (PAN), Local Area Network(LAN), Metropolitan Area Network (MAN), Wide Area Network (WAN), Network devices:- Ethernet card, Switch, Router, Hub, Gateway, Network topologies:- Mesh topology, Ring topology, Bus topology, Star topology, Hybrid topology, Concept of Client and Server, Basics of MAC and IP address.

Network Security: Threats and prevention, Malware:- Virus, Worms, Ransomware , Trojan, Spyware, Adware, Key-loggers, Combating malware, Antivirus, Spam, HTTP vs HTTPS, Firewall, Cookies, Hackers and Crackers.

Unit–V Python Programming-I

(05 Marks)

Introduction: Introduction to python programming, Features of python programming, Character set, Tokens: Keywords, Identifiers (names), Literals/values, Operators, Punctuators, Barebones of a python program, Create a variable, Multiple assignments.

Data Handling: Data types, Mutable and Immutable types, Operators:- Arithmetic, Relational, Assignment, Logical, Identity, Bitwise, Expressions:- Precedence of operators, Statement, Input and Output, Type conversion: - Explicit and Implicit conversion, Errors:- Syntax, Logical and Runtime errors.

Conditional Statements: Introduction, Types of statements of python, Statement flow control, The if statements of python:- the if-statement, the if-else statement, the nested if statement.

Unit– VI Data Structure

(05 Marks)

Concepts of Data Structure: Data Structure, Primitive (Integer, float, char, pointer) and Non-primitive (Arrays, Stacks, Queues, Graphs, Trees) data structure, Concept of searching (linear search, binary search) and Sorting (bubble sort, selection sort).

Stack and Queue: Stack: introduction, Applications and Operations, Queue: Introduction, Applications and Operations, De-queue: Introduction, Applications and Operations.

Practical (External):50 Marks

A. Hands on Skill

(15 Marks)

1. Write a Program that displays “Welcome to the world of python programming”.
2. Write a Program to add two integers.
3. Write a Program to swap two integers.
4. Write a Program to print a name (entered by the user).
5. Write a Program to check whether a number is even or odd.
6. Write a Program to check whether a number is prime or not.
7. Write a Program to find greatest among two numbers.

B. Written Test

(10 Marks)

C. Viva Voce

(15 Marks)

D. Student Portfolio / Practical Notebook

(10 Marks)

2.Retail

Job Role: *Trainee Associate*

Level-3(11th)

SCHEME OF ASSESSMENT

This course is a planned sequence of instructions consisting of Units meant for developing employability and vocational competencies of students of Class 11th opting for vocational subject along with general education subjects.

The unit-wise distribution of hours and marks for Class 11th is as follows:

Class 11 th			
Module Part and Name	Unit Name	No. of Hours for Theory and Practical (300)	Max. Marks Theory and Practical (100)
Part - A Employability Skills	Communication & Self-Management Skills-I	45	05
	Basic ICT, Entrepreneurship & Green Skills-I	65	05
Total		110	10
Part – B Vocational Skills	Fundamentals of Retailing	40	12
	Visual Merchandising Display and Display of stock for sale	45	14
	Products arrangement for Sale	40	08
	Health, Hygiene and Safety Measures	40	10
Total		165	40
Part - C Practical Work	Practical Examination	06	15
	Written Test	01	10
	Viva Voce	03	10
Total		10	35
Part-D Project Work/ Field Visit	Practical File / Student Portfolio	10	10
	Viva Voce	05	05
Total		15	15
Total		300	100

Theory: 50 Marks

“Part – A”

Employability Skills----- (10 Marks)

Unit – I Communication Skills and Self-Management Skills-I (05 Marks)

Communication, Types of communication, Communication Styles, Greetings & Introduction. Strength and Weakness Analysis, Grooming, Personal Hygiene, Team Work, Goal Setting, Time Management.

Unit – II Basic ICT, Entrepreneurship & Green Skills-I (05 Marks)

Introduction to ICT and ITeS , Word Processing (Create, Edit, Insert, Header/Footer, Save, Close and Print a document in Word Processor).

Entrepreneur and Entrepreneurship, Values of an Entrepreneur, Coming up with a business idea, Understanding the market.

Sectors of Green Economy, Policies for a Green Economy (Green India Mission (GIM)), Stakeholders in Green Economy (Government, Non-Governmental Organizations (NGOs) & Business and Industry).

“Part – B”

Vocational Skills ----- (40 Marks)

Unit – III Fundamentals of Retailing (08 Marks)

Meaning and significance of Retail Business, Concept of Organized and Unorganized retailing ,Functions and essential requirements of retailers , Retailer’s services to customers, Introduction to customer and consumer , Difference between Customer and Consumer, Customer service and Customer satisfaction, Skill Development and its importance, Duties and responsibilities of trainee associate. Skills required for trainee associate.

Unit– IV Visual Merchandising and Display of Stock for Sale (14 Marks)

Concept of Visual Merchandising – Meaning and its importance, Concept of Design brief, Meaning, Purpose and Importance of design brief, Content and style of design brief, Evaluation of design Brief, Elements of successful merchandise display, Focal points for display, Concept of visual design policy, Purpose and style of display, sale promotion through visual display, Concept of Display of Stock:- Meaning, Features and need of display, Factors affecting the display merchandise:- Stock ,Space, Position of the display and Dates, Resources used for display:- Size of display, material used in display, equipments and stock for display, Merchandise:- Meaning, Types and Importance of Merchandise, Labeling:- Purpose, Types and Techniques of Labeling, Precautions to be taken while labeling, Packaging :- Meaning and Importance , Techniques of Packaging.

Unit–V Products Arrangement for Sale (08 Marks)

Introduction:- Meaning of arrangement of products for sale in store, Need for arranging products, Floor/Shelf plan techniques in arranging products for sales, Safety measures while displaying products. Manufactures instructions for product arrangements, Methods of arranging goods for sale and difficulties involved. Procedure of dealing with damaged goods, Waste management in retail, Meaning of selling process, Difference between personal selling and salesmanship.

Unit–VI Health, Hygiene and Safety Measures

(10 Marks)

Health and Safety:- Meaning of Health and Safety, Study the ways to encourage colleagues to follow health and safety norms, Companies guidelines for safety, Types of equipments and materials used for health and safety, Risks and its types, Meaning of accidents and emergencies, Identifying and dealing with accident and emergency, Meaning of Reporting and system of reporting (accidents and emergencies)to the right person, Keeping store clean and hygienic, Personal hygiene and its importance .

Practical (External):50 Marks

A. Hands on Skill

(30 Marks)

Unit 1

- Observing and sharing communication styles of friends, teachers and family members
- Group discussion on qualities of a good team
- Demonstration of impressive appearance and groomed personality

Unit 2

- Demonstration and practice listing the features of word processing , Editing the text , Word wrapping and alignment
- Take up a product and suggest how its features can be improved
- Writing a two-page essay on important initiatives taken in India for promoting green economy

Unit 3

- To observe the basic functions and requirements of retailers in the retail store
- To understand Duties and Responsibilities of trainee associate
- To demonstrate the various customer services for convincing and satisfying the customer

Unit 4

- To know company policy for display
- To demonstrate the role of merchandise display with the help of role play
- To Demonstrate the various labeling techniques in retail stores

Unit 5

- To Prepare a chart on design brief
- To Prepare a poster on safety guidelines for visual display
- To identify different types of merchandise as per the segments of products

Unit 6

- Draw a chart containing shelf techniques and tools required for arranging products for sales in stores
- Role play on approach in case of difficulty in arranging products
- Identify and pickup the damaged goods from given goods

Unit 7

- To Demonstrate the company procedures and legal requirement for reducing health
- Prepare a chart on Company procedures for evacuation
- Prepare a list of equipment and material of cleaning

B. Viva Voce

(10 Marks)

C. Student Portfolio/Practical Notebook

(10 Marks)

3.HealthCare

Job Role: General Duty Assistant Trainee

Level-3(11th)

SCHEME OF ASSESSMENT

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The unit-wise distribution of hours and marks for Class 11th is as follows:

Class 11th			
Module Part and Name	Unit Name	No. of Hours for Theory and Practical (300)	Max. Marks Theory and Practical (100)
Part - A Employability Skills	Communication & Self-Management Skills-I	45	05
	Basic ICT, Entrepreneurship & Green Skills-I	65	05
Total		110	10
Part – B Vocational Skills	Introduction to Healthcare Systems	25	06
	Role of General Duty Assistant in Patient Care	30	08
	Customer Service and Public Relation	25	04
	Human Anatomy, Physiology and Nutrition	25	06
	Primary Healthcare and Medical Emergency	20	06
	Handling Emergency Services	20	04
	Personal Hygiene and First-Aid	20	06
Total		165	40
Part - C Practical Work	Practical Examination	06	15
	Written Test	01	10
	Viva Voce	03	10
Total		10	35
Part-D Project Work/ Field Visit	Practical File / Student Portfolio	10	10
	Viva Voce	05	05
Total		15	15
Total		300	100

Theory: 50 Marks

“Part – A”

Employability Skills -----(10 Marks)

Unit – I Communication Skills and Self-Management Skills-I (05 Marks)

Communication, Types of communication, Communication Styles, Greetings & Introduction. Strength and Weakness Analysis, Grooming, Personal Hygiene, Team Work, Goal Setting, Time Management.

Unit – II Basic ICT, Entrepreneurship & Green Skills-I (05 Marks)

Introduction to ICT and ITeS , Word Processing (Create, Edit, Insert, Header/Footer, Save, Close and Print a document in Word Processor).

Entrepreneur and Entrepreneurship, Values of an Entrepreneur, Coming up with a business idea, Understanding the market.

Sectors of Green Economy, Policies for a Green Economy (Green India Mission (GIM)), Stakeholders in Green Economy (Government, Non-Governmental Organizations (NGOs) & Business and Industry).

“Part – B”

Vocational Skills -----(40 Marks)

Unit – III Introduction to Healthcare Systems (06Marks)

Describe healthcare delivery systems, Identify the components and activities of Hospital, Describe role and functions of Clinics, Describe the functions of rehabilitation Centre, Describe the treatment and the services provided at the long term care facilities, Demonstrate the knowledge of hospice care, Demonstrate the knowledge of roles and functions of various departments, professionals and supportive staff of the hospital, Demonstrate the knowledge of roles and functions of supporting departments in hospital, Classify the hospitals on the basis of different criteria, Enumerate the role of General Duty Assistant to the various functions of hospital, Demonstrate the knowledge of the qualities of a Good General Duty Assistant

Unit– IV Role of General Duty Assistant in Patient Care (08 Marks)

Identify the role and functions of Patient care Assistant, Describe the daily care Plan of patient, Identify basic components required for patient comfort, Describe the patients safety, Provide for the patients daily care, Identify the qualities of a good Patient care assistant, Identify the role of General Duty Assistant implementing care plan, Demonstrate the knowledge of the role of General Duty, Assistant in feeding a patient, Identify and report vital signs, Describe the prepare bed according to the patient’s need, Position the patient according to the need, Demonstrate the knowledge of facts related to old age, Identify the normal changes that occur at old age, Demonstrate the knowledge of accomplishing basic needs of elderly people, Identify common problems and care of elderly, Demonstrate the knowledge of caring of infants and children Demonstrate the knowledge of goals, cycle and phases of disaster management and emergency response, Demonstrate the knowledge of structure, roles and responsibilities of Emergency Response Team, Demonstrate the knowledge of classification, causes ,methods and techniques of extinguishing fire using appropriate equipment.

Unit–V Customer Service and Public Relation (04 Marks)

Demonstrate the skills to handle customers effectively, Demonstrate the skills of taking orders on call, Demonstrate how to handle customer complaints, Demonstrate how to answer enquiries, Demonstrate the knowledge of the roles and functions performed by a Medical Receptionist, Demonstrate the knowledge of responding to emergency calls, Demonstrate the knowledge of dealing with patients, attendant.

Unit–VI Human Anatomy, Physiology and Nutrition (06 Marks)

Identify the parts of human body, demonstrate the knowledge of nutrients in the nutrition and growth of human body

Unit–VII Primary Healthcare and Medical Emergency (06 Marks)

Identify components of primary healthcare, Demonstrate chain of survival

Unit–VIII Handling Emergency Services (04 Marks)

Receive patient in hospital in emergency condition, Handle and monitor the patient, Transport the injured patient internally and externally, Demonstrate the knowledge of different methods and types of immobilization, Prevent the accidents/injuries in children, Identify the aims of planning of OT, location, size and different areas of operation theatre, Demonstrate the knowledge of staffing and equipment of OT, Prepare a Patient for Operation Theatre(OT), Render care of the patient in Post-Operative phase

Unit–IX Personal Hygiene and First Aid (06 Marks)

Demonstrate good hygiene practice, Identify factors affecting good health, Perform hand washing, Demonstrate personal grooming, Describe the principles and rules of First Aid, Identify facilities, equipment and materials used for First Aid, Perform the role of first aider in fever, heat stroke, back pain, asthma and food borne illness, Perform the role of first aider in cuts, bleeding, burns, insect bites and stings, dog bite sand snakebites

Practical (External):50 Marks

A. Hands on Skill

(15 Marks)

1. Prepare of Daily Care Plan
2. Measure body temperature using various types of thermometers
3. Measure Pulse Rate of a patient
4. Measure Respiratory rate of a patient
5. Measure B.P of patient
6. Demonstrate the steps involved in making of open bed
7. Demonstrate the steps involved in making of closed bed
8. Identify various positions of a patient
9. Procedure(s) for changing the patient's position
10. Demonstrate use of personal protective Equipment(i.e. Gowning, Gloving, wearing a mask etc)
11. Identify different parts of body
12. Carrying patient on a stretcher and wheel chair
13. Perform cradles and drag method of lifting
14. Demonstrate CPR
15. Identify equipment in a First aid-box
16. Demonstrate steps of Hand-washing
17. Demonstrate trimming of nails.

B. Written Test

(10 Marks)

C. Viva Voce

(15 Marks)

D. Student Portfolio / Practical Notebook

(10 Marks)

4.Tourism & Hospitality

Job Role: *Food & Beverage Service Associate*

Level-3(11th)

SCHEME OF ASSESSMENT

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Part - A Employability Skills	Communication & Self-Management Skills-I	45	05
	Basic ICT, Entrepreneurship & Green Skills-I	65	05
Total		110	10
Part – B Vocational Skills	Introduction to Food Service Industry & its Scope	20	04
	Plan & Prepare for the Food& Beverage Products	45	12
	Greeting, Welcoming & Other Services to the Guest	30	06
	Surfaces Used for Dining & Serving Food & Their Cleaning Procedure	40	12
	Dealing with Customer Payments.	30	06
Total		165	40
Part - C Practical Work	Practical Examination	06	15
	Written Test	01	10
	Viva Voce	03	10
Total		10	35
Part-D Project Work/ Field Visit	Practical Examination	10	10
	Viva Voce	05	05
Total		15	15
Total		300	100

Theory: 50 Marks

“Part – A”

Employability Skills ----- (10 Marks)

Unit – I Communication Skills and Self-Management Skills-I (05 Marks)

Communication, Types of communication, Communication Styles, Greetings & Introduction. Strength and Weakness Analysis, Grooming, Personal Hygiene, Team Work, Goal Setting, Time Management.

Unit – II Basic ICT, Entrepreneurship & Green Skills-I (05 Marks)

Introduction to ICT and ITeS , Word Processing (Create, Edit, Insert, Header/Footer, Save, Close and Print a document in Word Processor).

Entrepreneur and Entrepreneurship, Values of an Entrepreneur, Coming up with a business idea, Understanding the market.

Sectors of Green Economy, Policies for a Green Economy (Green India Mission (GIM)), Stakeholders in Green Economy (Government, Non-Governmental Organizations (NGOs) & Business and Industry).

“Part – B”

Vocational Skills ----- (40 Marks)

Unit – III Introduction to Food Service Industry And Its Scope. (04 Marks)

History of Food service. Status of Food Service. Classification of food service. Factor affecting the growth of Industry. Challenges faced by the Industry. Modern Trends in the Industry.

Unit – IV Plan and prepare for the food & beverage products. (12 Marks)

Getting ready for the service of the guest (Mise-en-place) :-

- (1) Checking of the area to serve F&B items to guests,
- (2) Checking of the Service trolleys and counters used in the F& B areas,
- (3) Checking of tables, chairs and the furniture's,
- (4) Checking of the sideboards

Type of services commonly (elaborated) used in the restaurant.

Importance of Mise-en Scene :-

- (1) Checking of cleanliness of the area,
- (2) Checking of the electrical appliances and Accessories,
- (3) Checking of linen and stocking of linens.

Assembling and filling of various accompaniments like Pickles, salads, sauce etc.

Waste disposal procedures and sanitation of restaurant areas.

Food standards and its role in Industry :-

- (1) Food standard, food hygiene and its implementation.
- (2) Standard of service in F& B areas.
- (3) Follow SOP for work completion, duty performance and disposal of broken chairs and tables.

Unit – V Greeting, Welcome and Other Service to the Guest

(06 Marks)

Welcoming and Greeting of guest, Booking of table reservations and table allocation to guest, Guest Assistance and Escorting of the guest, Suggestive selling of F&B items of the restaurant, Branding and Promotion of the dish. Inventory of CCG and other F&B accessories, Pick up of food and Assistance in service. Meal Experience and guest satisfaction and its role in repeat business.

Unit – VI Surfaces Used For Dining And Serving Food And Their Cleaning Procedure.

(12Marks)

SOP for cleaning of CCG, Tableware and Hollowware, Post meal services, cleaning of table and resetting of table for next course like desserts, Use of linens like aprons and table cloth, Napkin folding and removal of all table linen after service, SOP for serving finger bowl and mouth freshening products., Presentation of bills/checks., Store receiving and maintenance of its record, Receiving of food items from store like sausage accompaniments mouth fresheners and linens, Closing of shift and cleaning of all area with table and chairs, Opening of shift, checking and getting ready for operation, Checking of FFE, Follow a precautions and safety concerns during service of guests, Waste disposable procedure in F&B area.

Unit – VII Dealing With Customer Payments.

(06 Marks)

Checking of payment machine., Checking and use of Internet connection for payment., Taking of payment card from guest and assurance about the payment, Dealing with customers during payments and getting ready for payment procedure (Checking of machine etc.)

Collection of payments, modes of payments like Cash, Cheque, Credit Card etc., Payment collections via. Cash and deposit in counters., Receiving of paid bills on counter and handing over to guest with remaining amount, Record keeping of payment whether the Soft or Hard copy.

Practical (External):50 Marks

A. Hands on Skill

(15 Marks)

1. Display different greeting gestures prevalent in Kashmir Valley.
2. Show how to create a document in MS word.
3. Demonstrate how to clean the table before service.
4. Demonstrate how to operate a vacuum cleaner.
5. Show the process of escorting VIP guests.
6. Demonstrate the SOP for serving Finger bowl.
7. Display the handling of waste in F&B area.
8. Show how to operate swipe machine for receiving payments from customers.

B. Written Test

(10 Marks)

C. Viva Voce

(15 Marks)

D. Student Portfolio / Practical Notebook

(10 Marks)

4.Tourism & Hospitality

Job Role: Customer Service Executive (Meet & Greet)

Level-3(11th)

SCHEME OF ASSESSMENT

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Class 11 th			
Module Part and Name	Unit Name	No. of Hours for Theory and Practical (300)	Max. Marks Theory and Practical (100)
Part - A Employability Skills	Communication & Self-Management Skills-I	45	05
	Basic ICT, Entrepreneurship & Green Skills-I	65	05
Total		110	10
Part – B Vocational Skills	Introduction to the Tourism Industry	45	12
	Introduction to Hospitality Industry	45	12
	Customer Service	40	08
	Prepare for Providing Customer Service	35	08
Total		165	40
Part - C Practical Work	Practical Examination	06	15
	Written Test	01	10
	Viva Voce	03	10
Total		10	35
Part-D Project Work/ Field Visit	Practical Examination	10	10
	Viva Voce	05	05
Total		15	15
Total		300	100

Theory: 50 Marks

“Part – A”

Employability Skills ----- (10 Marks)

Unit – I Communication Skills and Self-Management Skills-I (05 Marks)

Communication, Types of communication, Communication Styles, Greetings & Introduction. Strength and Weakness Analysis, Grooming, Personal Hygiene, Team Work, Goal Setting, Time Management.

Unit – II Basic ICT, Entrepreneurship & Green Skills-I (05 Marks)

Introduction to ICT and ITeS, Word Processing (Create, Edit, Insert, Header/Footer, Save, Close and Print a document in Word Processor).

Entrepreneur and Entrepreneurship, Values of an Entrepreneur, Coming up with a business idea, Understanding the market.

Sectors of Green Economy, Policies for a Green Economy (Green India Mission (GIM)), Stakeholders in Green Economy (Government, Non-Governmental Organizations NGOs) & Business and Industry).

“Part – B”

Vocational Skills ----- (40 Marks)

Unit – III Introduction to the tourism industry (12 Marks)

1. Concept of Tourism Session
2. Types and Forms of Tourism Session
3. Components and Constituents of Tourism Session
4. Recent Trends in Tourism Activities and Tourist Attractions of India

Unit – IV Introduction to Hospitality Industry (12 Marks)

1. Types of Accommodation in Tourism and Hospitality Industry Session
2. Categorization of Hotels Session
3. Type of Rooms and Guest Services Session
4. Functions and Services of Front Office

Unit – V Customer Service (08 Marks)

1. Meet and Greet Services for Guests on Arrival and Departure Session
2. Communication with Colleagues and Customers Session
3. Significance of Tourism Industry in Economic Development Session
4. Role of Travel Agencies and Travel Desk

Unit – VI Prepare for Providing Customer Service (08 Marks)

1. Prepare for Providing Customer Service (Meet and Greet)
2. Prepare for Meeting Customers

Practical (External):50 Marks

A. Hands on Skill

(15 Marks)

1. Meet & Greet practices in school Laboratory
2. Receiving & seeing off the guests
3. After dinning activities
4. Reception service activities at front office.
5. Role play of all the activities related to meet & greet services.
6. Telephone etiquettes demonstration.
7. Field visit report submission.
8. Guest lecture feedback report making
9. Communication skill related to guest services.

B. Written Test

(10 Marks)

C. Viva Voce

(15 Marks)

D. Student Portfolio / Practical Notebook

(10 Marks)

5.Security

Job Role: CCTV Video Footage Auditor

Level-3(11th)

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Class 11th			
Module Part and Name	Unit Name	No. of Hours for Theory and Practical (300)	Max. Marks Theory and Practical (100)
Part -A Employability Skills	Communication & Self-Management Skills-I	45	05
	Basic ICT, Entrepreneurship & Green Skills-I	65	05
Total		110	10
Part-B Vocational Skills	Introduction to Security	40	10
	Introduction to CCTV Video Surveillance	35	09
	Introduction to the Job Role of CCTV Video Footage Auditor	25	12
	Investigation and Detection of incidence from Video Footages	65	09
Total		165	40
Part -C Practical Work	Practical Examination	06	15
	Written Test	01	10
	Practical File / Student Portfolio	03	10
Total		10	35
Part-D Project Work /Field Visit	Practical Examination	10	10
	Viva Voce	05	05
Total		15	15
Total		300	100

Theory: 50 Marks

“Part – A”

Employability Skills------(10 Marks)

Unit – I Communication Skills and Self-Management Skills-I (05 Marks)

Communication, Types of communication, Communication Styles, Greetings & Introduction. Strength and Weakness Analysis, Grooming, Personal Hygiene, Team Work, Goal Setting, Time Management.

Unit – II Basic ICT, Entrepreneurship & Green Skills-I (05 Marks)

Introduction to ICT and ITeS , Word Processing (Create, Edit, Insert, Header/Footer, Save, Close and Print a document in Word Processor).

Entrepreneur and Entrepreneurship, Values of an Entrepreneur, Coming up with a business idea, Understanding the market.

Sectors of Green Economy, Policies for a Green Economy (Green India Mission (GIM)), Stakeholders in Green Economy (Government, Non-Governmental Organizations (NGOs) & Business and Industry).

“Part – B”

Vocational Skills ----- (40 Marks)

Unit – III Introduction to Security (10 Marks)

Demonstrate the knowledge of guarding duties :- Introduction to security, Terminologies used in Security system and usage , Principles of security, Difference between public and private security , Structure and function of private security in India, Types of security guards (personal, residential, corporate, private, mobile, static, etc.), Security equipment , Guarding duties (observation, access control, handling information) , Security tasks in commercial and industrial deployments , Routine activities in the premises (as per the industry vertical)

Demonstrate the knowledge required to respond to risks, threats and security breaches:- Risk and threats to life, property, and premises, Possible security breaches , Ways to respond to risks, threats and security breaches, Reporting risks and hazards

Describe the rules and regulations in security:- Legal and illegal activities , Regulatory and legal Requirements, Rules and regulations governing private security in India, The Private Security Agencies (Regulation) Act, 2005

Unit – IV Introduction to CCTV Video Surveillance (09 Marks)

Elements of a basic CCTV system, Camera, monitor and digital recorder , Types of CCTV Cameras (Dome Camera - Bullet Type Camera - C-Mount Camera – Pan –view camera Day/Night Camera – Infrared CCTV Camera - Camera - Wireless Camera) , Network Devices (Switches, Routers, OLT and ONT, Types and Applications, Configuration and termination) , Applications of CCTV cameras on police operations and security.

Demonstrate the knowledge of CCTV surveillance techniques:- Transmission in CCTV – Wired, Wireless and IP Network transmission , CCTV coverage techniques , CCTV surveillance techniques, Operating principles and limitations of the surveillance system. , Recording the footage (analogue and digital video recorders. backup and archiving), Data storage devices - cloud storage technology

Unit – V Introduction to the Job Role of CCTV Video Footage Auditor (12 Marks)

Role and importance of CCTV footage, Retrieving CCTV footage, Ensuring authenticity of CCTV Footage, Preserving CCTV footage, Video tampering and detection, Analyzing CCTV footage, Use of CCTV as evidence before court

Demonstrate the knowledge of video footage auditing:- Importance of auditing CCTV video footage , Standard Operating Procedures (SoPs) for auditing CCTV video footage , Steps of auditing CCTV video footage

Unit – VI Investigation And Detection Of Incidence From Video Footage (09Marks)

Introduction to forensic analysis , Internet of Things (IoT) forensics (Cloud, Network, IoT device level forensics) , Difference between digital forensics and IoT forensics , Law-enforced forensic video analysis , Forensic analysis for video and multimedia, Image/video comparison , Enhanced forensic video analysis., Evidence identification and acquisition , Evidence examination, preservation, analysis and correlation , Tools for forensic analysis (autopsy, wire shark, encrypted disk detector, magnet RAM capture, network miner) , Process of carrying out the forensic analysis as per Standard Operating Procedure (SOP).

Demonstrate the knowledge of Investigation and detection of video footages:-

Modus operandi of criminals /miscreants against life and property based on historical data. , Video capture, screen, and analog video import with legacy format, synchronization of multiple videos to a common time-based for playing and processing

Practical (External):50 Marks

A. Hands on Skill

(15 Marks)

1. Practice exercises on the use of auditing software for converting the live CCTV video feed into images.
2. Demonstration on the difference between the different types of camera.
3. Using appropriate fire extinguishers for different classes of fires.
4. Demonstration of procedures and techniques for avoiding and preventing injuries.
5. Ways to priorities multiple incidents, to assess incidents

B. Written Test

(10 Marks)

C. Viva Voce

(15 Marks)

D. Student Portfolio / Practical Notebook

(10 Marks)

6.Agriculture

Job Role: *Organic Grower*

Level-3(11th)

SCHEME OF ASSESSMENT

This course is a planned sequence of instructions consisting of Units meant for developing employability and vocational competencies of students of Class 11th opting for vocational subject along with general education subjects.

The unit wise distribution of hours and marks for class 11th is as follows:

Class 11 th			
Module Part and Name	Unit Name	No. of Hours for Theory and Practical (300)	Max. Marks Theory and Practical (100)
Part – A Employability Skills	Communication & Self-Management Skills-I	45	05
	Basic ICT, Entrepreneurship & Green Skills-I	65	05
Total		110	10
Part – B Vocational Skills	Introduction to Dairy Farming	40	10
	Livestock Accommodation	45	14
	Establishing Livestock within Accommodation	40	06
	Providing Feed and Water for Livestock	40	10
Total		165	40
Part -C Practical Work	Practical Examination	06	15
	Written Test	01	10
	Practical File / Student Portfolio	03	10
Total		10	35
Part-D Project Work /Field Visit	Practical Examination	10	10
	Viva Voce	05	05
Total		15	15
Total		300	100

Theory: 50 Marks

“Part – A”

Employability Skills ----- (10 Marks)

Unit – I Communication Skills and Self-Management Skills-I (05 Marks)

Communication, Types of communication, Communication Styles, Greetings & Introduction. Strength and Weakness Analysis, Grooming, Personal Hygiene, Team Work, Goal Setting, Time Management.

Unit – II Basic ICT, Entrepreneurship & Green Skills-I (05 Marks)

Introduction to ICT and ITeS , Word Processing (Create, Edit, Insert, Header/Footer, Save, Close and Print a document in Word Processor).

Entrepreneur and Entrepreneurship, Values of an Entrepreneur, Coming up with a business idea, Understanding the market.

Sectors of Green Economy, Policies for a Green Economy (Green India Mission (GIM)), Stakeholders in Green Economy (Government, Non-Governmental Organizations (NGOs) & Business and Industry).

“Part – B”

Vocational Skills ----- (40 Marks)

Unit – III Introduction to Crops and Cropping Systems (10 Marks)

Identify the major agriculture crops and differentiate between specialty and commodity crop, Introduction to agriculture(Definition and branches), Major agriculture crops of India grown under organic farming(Paddy, wheat, maize, pulses, tea, coffee, tomato, potato, rose, marigold and carnation), importance of organically grown crops, Describe the different types of farming systems (Pure organic farming, Integrated farming system, Mixed farming), Describe the various cropping systems, Production of crops Monoculture, Multiple cropping; Intercropping, Mixed cropping, Relay cropping, Sequential cropping; Ratoon cropping , Alley cropping.

Unit – IV Introduction to Organic Farming (14 Marks)

Introduction to organic farming, Principles and components of organic farming, Advantages of organic farming, limitations of organic farming, Detrimental effects of chemical based farming system –depletion of soil health, environment pollution, reduction of natural enemies, pesticide consumption, threat to biodiversity, etc. , Natural v/s organic foods ;Types of organic farming – pure and integrated organic farming systems, Recycling nutrients in organic farming, organic manures , Types of organic manures– Farm Yard Manure, vermicompost, Method of preparation of Farm Yard Manure , Method of composting and Vermicomposting , Livestock production system – types and characteristics , Importance of dairy farming, sheep poultry farming, apiculture, Factors influencing livestock farming ,Role and benefits of livestock in organic farming – nutrient recycling, pest management, etc.

Unit – V Water, Nutrients and Pest Management in Organic Farming

(10 Marks)

Introduction to irrigation; Sources and methods of irrigation, Micro irrigation – drip and sprinkler irrigation systems, Advantages and disadvantages of drip and sprinkler irrigation, Factors affecting irrigation interval, Describe the types and use of biofertilizers, Classification of biofertilizers – nitrogen fixing, phosphorus solubilising, and plant growth promoting Rhizobacteria, Methods of application of biofertilizers– seed treatment, seedling root dip, direct application in soil, Precautions in use of bio-fertilizers, Classification of essential plant Nutrients, weed definition and methods of weed control; Cultural, Mechanical, Biological and physical methods of weed control, Enlist the various pest control methods(brief idea), Plant based extracts (e.g. neem, garlic, pongamia, etc.) used for pest control

Unit – VI Package of Practices for Organic Farming

(06 Marks)

Describe the package of practices for organic farming, popular varieties of vegetable crops grown under organic farming (tomato, potato, brinjal, cabbage), Popular varieties of flowering crops viz. rose, chrysanthemum, marigold., protected cultivation and its application in growing crops organically, Types of greenhouses, based on shape, construction, material, and ventilation, Crops commonly grown in greenhouses/Polyhouses – rose, gerbera, carnation, strawberry, cucumber; tomato and capsicum.

Practical (External):50 Marks

A. Hands on Skill

(15 Marks)

1. Visit to various websites to study the major agricultural crops, including crops grown locally.
2. Study of the agronomic map of India.
3. Preparation of charts, collages, posters depicting importance of different crops, including organically grown crops - food grain crops, oil seed crops, cash crops, pulses, vegetable crops, fruit crops, plantation crops, etc.
4. Preparation of charts on components of organic farming system .
5. Group discussion on the nutrient content and method of preparation of organic manures.
6. Methods of preparation of compost, Vermicompost.
7. Group discussion on effect of chemical fertilizers on soil and microorganisms.

B. Written Test

(10 Marks)

C. Viva Voce

(15 Marks)

D. Student Portfolio / Practical Notebook

(10 Marks)

6.Agriculture

Job Role: Dairy Farmer

Level-3(11th)

SCHEME OF ASSESSMENT

This course is a planned sequence of instructions consisting of Units meant for developing employability and vocational competencies of students of Class 11th opting for vocational subject along with general education subjects.

The unit wise distribution of hours and marks for class 11th is as follows:

Class 11th			
Module Part and Name	Unit Name	No. of Hours for Theory and Practical (300)	Max. Marks Theory and Practical (100)
Part – A Employability Skills	Communication & Self-Management Skills-I	45	05
	Basic ICT, Entrepreneurship & Green Skills-I	65	05
Total		110	10
Part – B Vocational Skills	Introduction to Dairy Farming	40	10
	Livestock Accommodation	45	14
	Establishing Livestock within Accommodation	40	06
	Providing Feed and Water for Livestock	40	10
Total		165	40
Part -C Practical Work	Practical Examination	06	15
	Written Test	01	10
	Practical File / Student Portfolio	03	10
Total		10	35
Part-D Project Work /Field Visit	Practical Examination	10	10
	Viva Voce	05	05
Total		15	15
Total		300	100

Theory: 50 Marks

“Part – A”

Employability Skills -----(10 Marks)

Unit – I Communication Skills and Self-Management Skills-I (05 Marks)

Communication, Types of communication, Communication Styles, Greetings & Introduction. Strength and Weakness Analysis, Grooming, Personal Hygiene, Team Work, Goal Setting, Time Management.

Unit – II Basic ICT, Entrepreneurship & Green Skills-I (05 Marks)

Introduction to ICT and ITeS , Word Processing (Create, Edit, Insert, Header/Footer, Save, Close and Print a document in Word Processor).

Entrepreneur and Entrepreneurship, Values of an Entrepreneur, Coming up with a business idea, Understanding the market.

Sectors of Green Economy, Policies for a Green Economy (Green India Mission (GIM)), Stakeholders in Green Economy (Government, Non-Governmental Organizations (NGOs) & Business and Industry).

“Part – B”

Vocational Skills ----- (40 Marks)

Unit – III Introduction to Dairy Farming (10 Marks)

Importance of dairy farming, employment potential in dairy, agriculture and processed food products export development authority (APEEDA), Important breeds of cattle, indigenous cattle breeds of economic importance, exotic cattle breeds, crossbred cattle, Indian buffalo breeds, performance of important buffalo breeds of India.

Unit – IV Livestock Accommodation (14 Marks)

Introduction, basics of animal housing, key aspects of animal housing, types of livestock housing, loose housing system, flooring in loose housing system, benefits of loose housing system, conventional housing system, equipment and machinery required for livestock housing, standard workplace procedures followed in a dairy farm, grouping of cattle in a herd. Layout of animal housing, layout plan of a large dairy farm, animal she , housing for heifers and young males, dairy section, fodder production sections, manual disposal area, schedule of daily farm operations.

Unit –V Establishing Livestock within Accommodation (06 Marks)

Introduction standard practices for maintaining health of cattle, vaccination schedule of cattle, documentation of vaccination, establishing suitable environmental conditions in a dairy farm, minimizing stress in dairy animals, transportation in dairy animals, loading and unloading ramps for livestock, safety measures for farm workers and disposal of manure, common PPE used by dairy workers, vermin composting, composting.

Unit – VI Providing Feed and Water For Livestock

(10 Marks)

Animal feedstuff, feed composition and its quality, assessing the overall quality of animal feed, measurement of energy quality in animal feed, measurement of protein quality in animal feed, feeding of livestock, feeding of dairy animals, feed requirement based on thumb rule method, feed requirements based on scientific feed standards, major ingredients for feed preparation, basic equipment /machines required for the preparation of concentrate mixture, preparation of feed at the farm, maintaining feed inventory, safe and scientific storage of animal feed, water requirement of dairy animals, cause of feed wastage and measures to minimize it.

Practical (External):50 Marks

A. Hands on Skill

(15 Marks)

1. Evaluate the potential for employment in dairy farming in India.
2. Identify the various breeds of cows and buffaloes in a dairy farm.
3. Examine the housing design of nearby dairy farm.
4. Note down the dimension of various housing structure present in the dairy farm.
5. Note down the daily schedule of nearby dairy farm.
6. Identify sick animals and note down the symptoms of disease in them.
7. Make the list of feed ingredients and fodder in a dairy farm.

B. Written Test

(10 Marks)

C. Viva Voce

(15 Marks)

D. Student Portfolio / Practical Notebook

(10 Marks)

7. Telecommunication

Job Role: Optical Fibre Technician

Level-3(11th)

SCHEME OF ASSESSMENT

This course is a planned sequence of instructions consisting of Units meant for developing employability and vocational competencies of students of Class 11th opting for vocational subject along with general education subjects.

The unit wise distribution of hours and marks for class 11th is as follows:

Class 11th			
Module Part and Name	Unit Name	No. of Hours for Theory and Practical (300)	Max. Marks Theory and Practical (100)
Part – A Employability Skills	Communication and Self-Management Skills-I	45	05
	Basic ICT, Entrepreneurship & Green Skills-I	65	05
Total		110	10
Part – B Vocational Skills	Fundamentals of optical fiber technology	50	12
	Tools, Equipment and Components	40	08
	Conditional Maintenance and Safety Measures	40	12
	Site Visit and Optical Networking	35	08
Total		165	40
Part -C Practical Work	Practical Examination	06	15
	Written Test	01	10
	Practical File / Student Portfolio	03	10
Total		10	35
Part-D Project Work /Field Visit	Practical Examination	10	10
	Viva Voce	05	05
Total		15	15
Total		300	100

Theory: 50 Marks

“Part – A”

Employability Skills ----- (10 Marks)

Unit – I Communication Skills and Self-Management Skills-I (05 Marks)

Communication, Types of communication, Communication Styles, Greetings & Introduction. Strength and Weakness Analysis, Grooming, Personal Hygiene, Team Work, Goal Setting, Time Management.

Unit – II Basic ICT, Entrepreneurship & Green Skills-I (05 Marks)

Introduction to ICT and ITes , Word Processing (Create, Edit, Insert, Header/Footer, Save, Close and Print a document in Word Processor).

Entrepreneur and Entrepreneurship, Values of an Entrepreneur, Coming up with a business idea, Understanding the market.

Sectors of Green Economy, Policies for a Green Economy (Green India Mission (GIM)), Stakeholders in Green Economy (Government, Non-Governmental Organizations (NGOs) & Business and Industry).

“Part – B”

Vocational Skills ----- (40 Marks)

Unit III: Fundamentals of Optical Fiber Technology (12 Marks)

History and evolution of fiber optics, Advantages/disadvantages of fiber optics, Basics of a fiber optic communications system, Applications of fiber optics, Nature of light Propagation, Characteristics of light, Electromagnetic spectrum, Snell’s law, critical angle, Reflection, Refraction, Total internal reflection, Refractive index, Acceptance angle, Acceptance cone, Numerical aperture, Structure of optical fiber, Fiber optic – glass fibers, plastic fibers, fiber sizes, Types of fiber based on modes of propagation – single mode and multi-mode fiber, step index and graded index fiber, Attenuation and dispersion, Buffering and types of buffering, Types of cables – cordage, distribution cable, breakout cable, Armored cable, messenger cable, ribbon cable, submarine cable, short and long run cables, hybrid, composite cables.

Unit IV: Tools, Equipment and Components (08 Marks)

Structure of LED & its types (surface emitting LED, Edge emitting LED), Advantages and disadvantages of LED, Fiber-LED coupling, LASERS diode & its types, Uses of LASER, Basic Hand Tools – screwdriver, cable cutting knife, Plier, scissors, round tube cutter, Electrical tape, optical fiber stripper, Splicing tools – optical fiber splicing machine, cleaver, protection sleeve, mechanical splice connector, Matching Gel, clamp spring, Cleaning Tools – Cleaning swab, gloves, Tissue paper, Isopropyl alcohol, Testing tools – OTDR, Termination Kit – Optical connectors and its types, Tools for installing cables – Tubing cutter, Rotary cable slitting and ringing tool, cable jacket stripper, Buffer tube stripper.

Unit V: Conditional Maintenance and Safety Measures (12 Marks)

Testing optical fibre – visual fault locator, Inspection microscope, Cleaning fibre ends, Bare fibre test, Optical return loss test, Methods for measuring return Loss, Optical time domain reflectometers (OTDRs) –Elements & specification, Fibre optic power meters, Insertion loss tests, Requirement of splicing,

Parameters to be considered to perform splicing, Types of splicing – Fusion splicing, Mechanical splicing, Selecting the splicing method, Safety precautions in handling optical fibre, Safety precautions related to optical fibre fire safety, Precautions for optical fibre workmanship safety, Important safety guidelines for workman, Cleanliness and safe work surroundings.

Unit VI: Site Visit and Optical Networking

(08 Marks)

OFC route plan, Route inspection, Route diagrams, Different site conditions, Advantages of an effective route inspection, Safety and security of site, Various parameters to inspect the site, Fibre optic link power budget, Optical technologies – FTTX, Multiplexing.

Practical (External):50 Marks

A. Hands on Skill

(15 Marks)

1. Demonstrate an experiment for propagation of light.
2. Verify the laws of reflection and refraction, total internal reflection.
3. Draw the diagram of cable and name the different parts of cable.
4. Identify and name the various types of cable.
5. Identify and name the tools in fiber optics tool kit.
6. Procedure to check the continuity of the optical fibre cable with Visual Fault Inspector.
7. To test insertion loss in optical fibre.
8. Demonstrate to handle the tools and equipment safely.
9. Demonstrate the first aid.

B. Written Test

(10 Marks)

C. Viva Voce

(15 Marks)

D. Student Portfolio / Practical Notebook

(10 Marks)

8. Media and Entertainment

Job Role: Texturing Artist

Level-3(11th)

SCHEME OF ASSESSMENT

This course is a planned sequence of instructions consisting of Units meant for developing employability and vocational competencies of students of Class 11th opting for vocational subject along with general education subjects.

The unit wise distribution of hours and marks for class 11th is as follows:

Class 11 th			
Module Part and Name	Unit Name	No. of Hours for Theory and Practical (300)	Max. Marks Theory and Practical (100)
Part – A Employability Skills	Communication & Self-Management Skills-I	45	05
	Basic ICT, Entrepreneurship & Green Skills-I	65	05
Total		110	10
Part – B Vocational Skills	Color Theory	40	10
	Digital Still Photography and Preproduction	25	10
	Drawing and Painting Tools using Adobe Photoshop	70	14
	Lighting for Photography	30	06
Total		165	40
Part – C Practical Work	Practical Examination	06	15
	Written Test	01	10
	Viva Voce	03	10
Total		10	35
Part-D Project Work/ Field Visit	Practical File / Student Portfolio	10	10
	Viva Voce	05	05
Total		15	15
Total		300	100

Theory: 50 Marks

“Part – A”

Employability Skills ----- (10 Marks)

Unit – I Communication Skills and Self-Management Skills-I (05 Marks)

Communication, Types of communication, Communication Styles, Greetings & Introduction. Strength and Weakness Analysis, Grooming, Personal Hygiene, Team Work, Goal Setting, Time Management.

Unit – II Basic ICT, Entrepreneurship & Green Skills-I (05 Marks)

Introduction to ICT and ITeS , Word Processing (Create, Edit, Insert, Header/Footer, Save, Close and Print a document in Word Processor).

Entrepreneur and Entrepreneurship, Values of an Entrepreneur, Coming up with a business idea, Understanding the market.

Sectors of Green Economy, Policies for a Green Economy (Green India Mission (GIM)), Stakeholders in Green Economy (Government, Non-Governmental Organizations (NGOs) & Business and Industry).

“Part – B”

Vocational Skills ----- (40 Marks)

Unit – III Colour Theory (10 Marks)

History of principles of colour theory ,Terms related to color theory, The types of colour wheels ,Types of colours, Digital colour wheel , Print media colour wheel, RGB display mechanism , Pixel , Resolution, Monochromatic colour scheme , Analogous colour scheme , Complimentary colour scheme , Warm and cool colours.

Unit – IV Digital Still Photography and Pre-Production (10 Marks)

Camera angles , Interface of camera movements and its modes including depth of field, zoom, exposure, focus, etc., Pre-production and its importance of it in the production pipeline , Live action and animation , Storyboard ,Character design, Model sheets , Animatic.

Unit – V Drawing and Painting Using Adobe Photoshop (14 Marks)

Adobe Photoshop – colour mode and use of backgrounds, Selection and manipulation of tools ,Painting and retouching tools ,Text and shape tools ,Colour channels, picker, swatches, history, text and all the tools in tool bars

Use of blending modes :-Blending modes: (i) Multiply (ii) Screen (iii) Overlay (iv) Various other modes, Various colour modes - RGB, CMYK, Grey Scale, Bitmap and Index colour modes,

Correction tools for image adjustment; and Adjusting the brightness, contrast and saturation of the image.

Steps for creating digital matte painting.

Purpose of composition, Rule of third and balancing element.

Unit – VI Lighting for Photography

(06 Marks)

High key and low key light, White balance ,Effective Lighting for Photography.

Practical (External):50 Marks

A. Hands on Skill

(15 Marks)

1. Demonstrate the use of artistic colour wheel.
2. Demonstrate the use of digital wheel colour.
3. Describe the RGB display mechanism.
4. Demonstrate camera angles and movements.
5. Demonstrate the use and knowledge for the process of Pre Production.
6. Demonstrate the use Adobe Photoshop.
7. Demonstrate the use different drawing and painting tools.
8. Demonstrate the use different blending modes.
9. Demonstrate image adjustment and colour correction.
10. Demonstrate steps for digital Matte Painting.

B. Written Test

(10 Marks)

C. Viva Voce

(15 Marks)

D. Student Portfolio / Practical Notebook

(10 Marks)

9.Beauty and Wellness

Job Role: Beauty Therapist

Level-3(11th)

SCHEME OF ASSESSMENT

This course is a planned sequence of instructions consisting of Units meant for developing employability and vocational competencies of students of Class 11th opting for vocational subject along with general education subjects.

The unit wise distribution of hours and marks for class 11th is as follows:

Class 11 th			
Module Part and Name	Unit Name	No. of Hours for Theory and Practical (300)	Max. Marks Theory and Practical (100)
Part - A Employability Skills	Communication & Self-Management Skills-I	45	05
	Basic ICT, Entrepreneurship & Green Skills-I	65	05
Total		110	10
Part – B Vocational Skills	Introduction to beauty and wellness industry and beauty therapy	40	10
	Skin care service	50	12
	Manicure and Pedicure service	50	12
	Depilation services	25	06
Total		165	40
Part - C Practical Work	Practical Examination	06	15
	Written Test	01	10
	Viva Voce	03	10
Total		10	35
Part-D Project Work /Field Visit	Practical File / Student Portfolio	10	10
	Viva Voce	05	05
Total		15	15
Total		300	100

Theory: 50 Marks

“Part – A”

Employability Skills -----(10 Marks)

Unit – I Communication Skills and Self-Management Skills-I (05 Marks)

Communication, Types of communication, Communication Styles, Greetings & Introduction. Strength and Weakness Analysis, Grooming, Personal Hygiene, Team Work, Goal Setting, Time Management.

Unit – II Basic ICT, Entrepreneurship & Green Skills-I (05 Marks)

Introduction to ICT and ITeS , Word Processing (Create, Edit, Insert, Header/Footer, Save, Close and Print a document in Word Processor).

Entrepreneur and Entrepreneurship, Values of an Entrepreneur, Coming up with a business idea, Understanding the market.

Sectors of Green Economy, Policies for a Green Economy (Green India Mission (GIM)), Stakeholders in Green Economy (Government, Non-Governmental Organizations (NGOs) & Business and Industry).

“Part – B”

Vocational Skills -----(40 Marks)

Unit III: Introduction to Beauty And Wellness Industry And Beauty Therapy (10 Marks)

Introduction to beauty and wellness industry, Beauty and wellness sub-segments, Career path within the beauty industry, Services in beauty therapy :(Pedicure , Manicure ,Threading ,Waxing ,Bleach, Face clean up , Make up , Hairdo , Mehendi) , Preparation of work area , Maintenance of record cards , Sterilizations and disinfection, Personal presentation and behavior ,Safe disposal of waste , Storage of tools and equipment , Compliance of rules and norms at workplace, Hazards and risks at workplace – Fire, chemical, electricity, etc. Threats and risks associated with posture, lifting and carrying objects, Maintaining hygiene at the Salon.

Unit IV: Skin Care Service (12 Marks)

Structure of the skin – epidermis, dermis, subcutaneous layer, hair follicle, hair shaft, sebaceous gland, arrector pili muscle, sweat gland, and sensory nerve endings, Functions of the skin - protection, thermoregulation, hormone synthesis, excretion, immunological function, and sensory function , Characteristics of the skin and skin types – oily, dry, combination skin ,Types of skin masks and their effects, Procedure of mask application, Blackhead and whitehead extraction, Skin warming techniques, Actions of the facial, Actions of the neck, Actions of the shoulder , Body movements, Types of bleach ,Importance of patch test and bleach, Resources required for bleaching, Skin warming procedure, Different types of skin warming devices and its effect on the skin, Bleach preparation and application, Advantages and disadvantages of bleaching.

Unit V: Manicure and Pedicure Services (12 Marks)

Human body systems, Skeletal system, Bones of the arm and leg, Bones of hand and wrist, Muscular system, Structure of the nail, Nail growth and structure, Preparing the work area, Equipment and materials used for Manicure, Identification of nail conditions and contraindications, Manicure procedure, Applying nail polish, Preparing the work area, Equipment and materials used for Pedicure, Contraindications for Pedicure.

Unit VI: Depilation Services

(06 Marks)

Types of hair , Structure of hair , Growth cycle of hair ,After care advice for waxing , Guidelines for waste disposal , Guidelines for work area preparation, Equipment and products required for waxing , Benefits of threading , Types of tools and materials used for threading - e.g. scissors, disposable eye brow brush etc. materials: thread .

Practical (External):50 Marks

A. Hands on Skill

(15 Marks)

1. Demonstration of preparing client for treatment
2. Demonstration of sterilization and disinfection of tools and equipment.
3. Group activities on understanding the structure and functions of skin
4. Showing videos related to ageing process of skin and mask application
5. Demonstration of patch test
6. Analysis of skin sensitivity
7. Demonstration of bleach preparation and application.
8. Demonstration of cleansing, toning and moisturizing of skin.
9. Demonstration on identification of nail shape, nail condition (texture, disease, etc.)
10. Demonstration on preparing client for manicure and pedicure services
11. Identification of products and tools suitable for carrying out manicure services and pedicure services .

B. Written Test

(10 Marks)

C. Viva Voce

(15 Marks)

D. Student Portfolio / Practical Notebook

(10 Marks)

10. Physical Education and Sports

Job Role: Fitness Trainer

Level-3(11th)

SCHEME OF ASSESSMENT

This course is a planned sequence of instructions consisting of Units meant for developing employability and vocational competencies of students of Class 11th & 12th opting for vocational subject along with general education subjects.

The unit wise distribution of hours and marks for class 11th is as follows:

Class 11 th			
Module Part and Name	Unit Name	No. of Hours for Theory and Practical (300)	Max. Marks Theory and Practical (100)
Part - A Employability Skills	Communication & Self-Management Skills-I	45	05
	Basic ICT, Entrepreneurship & Green Skills-I	65	05
Total		110	10
Part – B Vocational Skills	Introduction to Fitness	65	15
	Role and responsibilities of fitness trainer	40	10
	Starting and Managing a Fitness Centre	60	15
Total		165	40
Part - C Practical Work	Practical Examination	06	15
	Written Test	01	10
	Viva Voce	03	10
Total		10	35
Part-D Project Work /Field Visit	Practical File / Student Portfolio	10	10
	Viva Voce	05	05
Total		15	15
Total		300	100

Theory: 50 Marks

“Part – A”

Employability Skills----- (10 Marks)

Unit – I Communication Skills and Self-Management Skills-I (05 Marks)

Communication, Types of communication, Communication Styles, Greetings & Introduction. Strength and Weakness Analysis, Grooming, Personal Hygiene, Team Work, Goal Setting, Time Management.

Unit – II Basic ICT, Entrepreneurship & Green Skills-I (05 Marks)

Introduction to ICT and ITes , Word Processing (Create, Edit, Insert, Header/Footer, Save, Close and Print a document in Word Processor).

Entrepreneur and Entrepreneurship, Values of an Entrepreneur, Coming up with a business idea, Understanding the market.

Sectors of Green Economy, Policies for a Green Economy (Green India Mission (GIM)), Stakeholders in Green Economy (Government, Non-Governmental Organisations (NGOs) & Business and Industry).

“Part – B”

Vocational Skills ----- (40 Marks)

Unit - III: Introduction to Fitness (15 Marks)

1. Meaning and Introduction of Fitness and physical fitness. Factors Affecting Physical Fitness, Causes and Bad effects of poor physical fitness, Importance of good physical fitness.
2. Components of Fitness. Cardio vascular endurance, Muscular endurance, Muscular strength, Muscular power, Flexibility, balance, Speed, Reaction time, Agility, Body composition.
3. Methods of developmental trainings or exercises of physical fitness.
4. Measures and techniques of maintaining and promoting fitness.

Unit - IV: Roles and Responsibilities Of a Fitness Trainer (10 Marks)

1. Meaning and Introduction of Fitness Trainer.
2. Essential Knowledge and qualification required by a fitness trainer.
3. Qualities and skills to be required by a fitness trainer and a personal trainer.
4. Common Challenges and future of a fitness trainer.
5. Administration of Physique, age and Gender related exercises by a fitness trainer.
6. Role, duties and Responsibilities of a Fitness trainer, personal trainer, gym trainer and Athletic trainer

Unit V: Starting and Managing A Fitness Centre

(15 Marks)

Establishment of a fitness centre:-

1. Preparation of Planning for establishing a Fitness centre.
2. Requirements, challenges and problems for starting fitness centre.
3. Infrastructure, Facilities, Services and equipments for a fitness center.
4. Ways of Maintenance and up gradation.
5. Role, Need and importance of fitness centers, fitness clubs, Health and Fitness Institutions and fitness industries.
6. Sports Managements and its Principles.
7. Need and importance of management
8. Qualities of a good Manager.

Practical (External):50 Marks

A. Hands on Skill

(30 Marks)

1. Physical Fitness Test

(15 Marks)

2. Skill Test of games and Sports student Choice

(15 Marks)

B. Viva Voce

(10 Marks)

C. Student Portfolio/Practical Notebook.

(10 Marks)

11.Automotive

Job Role: Automotive Service Technician L-4

Level-3(11th)

SCHEME OF ASSESSMENT

This course is a planned sequence of instructions consisting of Units meant for developing employability and vocational competencies of students of Class 11th & 12th opting for vocational subject along with general education subjects.

The unit wise distribution of hours and marks for class 11th is as follows:

Class 11 th			
Module Part and Name	Unit Name	No. of Hours for Theory and Practical (300)	Max. Marks Theory and Practical (100)
Part - A Employability Skills	Communication & Self-Management Skills-I	45	05
	Basic ICT, Entrepreneurship & Green Skills-I	65	05
Total		110	10
Part – B Vocational Skills	Introduction to Engineering Geometrics and Drawing	20	04
	Fasteners	15	04
	Materials	20	04
	Measuring instrument	20	06
	Regular maintenance of an Engine	15	04
	Regular maintenance of Transmission system	20	04
	Regular Maintenance of Gear Box	20	04
	Service of Wheels	25	8
	Regular Maintenance of Brakes	10	2
Total		165	40
Part -C Practical Work	Practical Examination	06	15
	Written Test	01	10
	Viva Voce	03	10
Total		10	35
Part-D Project Work /Field Visit	Practical File / Student Portfolio	10	10
	Viva Voce	05	05
Total		15	15
Total		300	100

Theory: 50 Marks

“Part – A”

Employability Skills----- (10 Marks)

Unit – I Communication Skills and Self-Management Skills-I (05 Marks)

Communication, Types of communication, Communication Styles, Greetings & Introduction. Strength and Weakness Analysis, Grooming, Personal Hygiene, Team Work, Goal Setting, Time Management.

Unit – II Basic ICT, Entrepreneurship & Green Skills-I (05 Marks)

Introduction to ICT and ITeS , Word Processing (Create, Edit, Insert, Header/Footer, Save, Close and Print a document in Word Processor).

Entrepreneur and Entrepreneurship, Values of an Entrepreneur, Coming up with a business idea, Understanding the market.

Sectors of Green Economy, Policies for a Green Economy (Green India Mission (GIM)), Stakeholders in Green Economy (Government, Non-Governmental Organizations (NGOs) & Business and Industry).

“Part – B”

Vocational Skills ----- (40 Marks)

Unit III: Engineering Drawing (04 Marks)

Session 1 - Basic Geometric Constructions:-

Tools for Making Geometrical Constructions

Session 2 - Tools of Engineering Drawing:-

Engineering Drawing, Basic Line Types, Projections, Isometric projection, Orthographic projection, First Angle Projection, Third Angle Projection, Dimensioning, Drawing Sheet Layout, Title Block

Unit IV: Fasteners (04 Marks)

Session 1 - Automotive Bolts and Machine Screws:-

Thread on the Bolt, Basic Thread Terms

Session 2 - Automotive Nuts:-

Thread Profile in Nut, Dimensions of Nut, Material of Nuts, Types of Nuts (Hex, Jam, Wing, Flange, Square)

Session 3- Automotive Studs:-

Wheel Studs(Screw -in and Press-in)

Session 4 - Automotive Washers and Rivets:-

Types of Washers (Flat, Finishing, Square plate, Dock) , Rivets and its types

Unit V: Material

(04 Marks)

Session 1 - Engineering Material:-

Classification of Engineering Material, Metals(Ferrous and Non Ferrous), Ferrous(Steel, Cast iron and Wrought iron), Non ferrous(Metals and Alloys)

Session 2 - Basic Manufacturing Processes:-

Machining, Forming, Rolling, Forging, Extrusion

Unit VI: Measuring Equipment

(06 Marks)

Session 1 - Handling and Usage of Direct and Indirect Measuring Instruments:-

Measuring Instruments, Direct Measuring Instruments(Steel-scale or ruler, Steel tape, Verniercaliper, Micrometer)

Session 2 - Angular Measuring Instruments :-

Protractor, Blade Protractor, Universal Protractor

Session 3 - Dial Indicator or Gauge and other Gauges:-

Digital Dial Indicator or Gauge, Telescopic Gauge, Screw Pitch Gauges

Session 4: Instruments on the Dashboard of a Vehicle:-

Important Components of Dashboard, Speedometer, Tachometer, Odometer, Fuel gauge, Temperature gauge, Malfunction indicator lamp, Automotive navigation system, Driver information system (DIS)

Unit VII: Regular Maintenance of an Engine

(04 Marks)

Session 1 - Inspection of an Engine:-

Selective Procedure to Check the Leakage in a Vehicle's Engine, Air cooled system leakage, Fuel leakage, Leakage of combustion gases, Lubricating oil leakage

Session 2 - Washing of an Engine:-

Material and Equipment Required to Clean Engine, Steps to clean or wash the engine

Session 3 - Tuning of Fuel System of an Engine :-

Steps for fuel tuning, Setting idle speed of an engine, Nozzle pressure test

Session 4 - Tuning of Ignition System of an Engine:-

Basic Steps for Tuning of Ignition System

Session 5 - Tuning of Lubrication System of an Engine:-

Tuning Procedure, Changing the Oil, Changing of Oil Filter, Measuring Oil Pressure

Session 6 - Tuning of Cooling System of an Engine :-

Steps Involved in Checking the Cooling System, Reading of Temperature Gauge,

Parts of Cooling System:

- Checking circulation of water in cooling System
- Checking of coolant leakage

Setting of cooling fan belt tension.

Unit VIII: Regular Maintenance of Transmission System

(04 Marks)

Session 1 - Transmission System:-

Clutch, Gearbox or Transmission, Propeller Shaft, Differential Unit

Session 2 - Clutch Maintenance and Adjustment:-

Clutch Maintenance, Clutch Adjustments (free ply Adjustments 2 wheelers & 4 wheelers)

Unit IX: Regular Maintenance of Gearbox

(04 Marks)

Session 1 - Lubrication of Gearbox:-

Steps for Changing Lubrication of Gearbox, Changing the Lubricating Oil

Session 2 - Setting of Gearbox

Unit X : Servicing of Wheels

(08 Marks)

Session 1 - Importance of Wheels:-

Types of Wheels

Session 2 - Importance of Hub Greasing and Bearing Play Adjustment:-

Wheel Hub, Stub Axle, Steps for Removing Wheel from Axle

Session 3 - Tyre and Tube Maintenance:-

Tyre and its types, Advantages of tubeless tyres, Maintenance of Tyres and Tubes

Session 4 - Repairing of Punctured Tube:-

Repairing of Punctured Tube, Cold Patch Method, Hot Patch Method

Unit XI: Maintenance of Brakes

(02 Marks)

Session 1 - Brake and its Maintenance:-

Principle of Braking, Functions of a Good Braking System, Different types of Brakes (Mechanical, Hydraulic, Pneumatic), Servicing and Repairing of Mechanical Brakes, Steps for repairing Mechanical Brakes.

Practical (External):50 Marks

A. Hands on Skill

(15 Marks)

1. Identify and describe drawing tools, Draw geometric construction.
2. Identification of engineering material used in automobiles, Writing of list of process used in Manufacturing System
3. Reading the verniercaliper and measuring the diameter of the cylinder
4. Measuring the dimensions of an object using Micrometer
5. Tracing the different leakages like oil, coolant, and combustion gases.
6. Identify the different units of the transmission system.
7. Identify different types of wheels and practice removing the wheel from axle.
8. Identify the different components of different types of brakes.

B. Written Test

(10 Marks)

C. Viva Voce

(15 Marks)

D. Student Portfolio / Practical Notebook

(10 Marks)

12.Apparel Made-ups and Home Furnishing

Job Role: *Specialized Sewing Machine Operator*

Level-3(11th)

SCHEME OF ASSESSMENT

This course is a planned sequence of instructions consisting of Units meant for developing employability and vocational competencies of students of Class 11th opting for vocational subject along with general education subjects.

The unit wise distribution of hours and marks for class 11th is as follows:

Class 11 th			
Module Part and Name	Unit Name	No. of Hours for Theory and Practical (300)	Max. Marks Theory and Practical (100)
Part - A Employability Skills	Communication & Self-Management Skills-I	45	05
	Basic ICT, Entrepreneurship & Green Skills-I	65	05
Total		110	10
Part – B Vocational Skills	Production Technology	40	12
	Introduction to Industrial Sewing Machines	40	12
	Machines For Seam Finishes and Ornamental Stitches	20	04
	Machine’s For Attachments	25	04
	Personal Hygiene And Cleaning And Maintenance Of Workplace	40	08
Total		165	40
Part - C Practical Work	Practical Examination	06	15
	Written Test	01	10
	Viva Voce	03	10
Total		10	35
Part-D Project Work /Field Visit	Practical File / Student Portfolio	10	10
	Viva Voce	05	05
Total		15	15
Total		300	100

Theory: 50 Marks

“Part – A”

Employability Skills------(10 Marks)

Unit – I Communication Skills and Self-Management Skills-I (05 Marks)

Communication, Types of communication, Communication Styles, Greetings & Introduction. Strength and Weakness Analysis, Grooming, Personal Hygiene, Team Work, Goal Setting, Time Management.

Unit – II Basic ICT, Entrepreneurship & Green Skills-I (05 Marks)

Introduction to ICT and ITeS , Word Processing (Create, Edit, Insert, Header/Footer, Save, Close and Print a document in Word Processor).

Entrepreneur and Entrepreneurship, Values of an Entrepreneur, Coming up with a business idea, Understanding the market.

Sectors of Green Economy, Policies for a Green Economy (Green India Mission (GIM)), Stakeholders in Green Economy (Government, Non-Governmental Organizations (NGOs) & Business and Industry).

“Part – B”

Vocational Skills -----(40 Marks)

Unit – III Production Technology (12 Marks)

Garment Production system, Types of garment production system. a. Individual system b. Group system, Evaluation of Production systems, Describe garment Operating Procedure, Introduction to Garment operating Procedure, Need of process flow Chart in garment Production, Assembly sequence of Long sleeve shirt and Trouser.

Unit – IV Introduction to Industrial Sewing Machine (12 Marks)

Types of threads, Thread classification based on: a. fibre type, b. manufacturing c. finishing ,d. their end uses, Terminology related to sewing threads, Suitability of threads for: a. fabrics, b. machines, Identify parts of needle, selection and needle system ,Introduction to sewing machine needles for specialized machines, Types of needles: a. Standard needles, b. decorative needles, c. special purpose Needle, Choose appropriate Needle for fabric and Machine, Needle system

Unit – V Machines for Seam Finishes and Ornamental Stitches (04 Marks)

Introduction and Importance of lock Stitch machine, Single needle lock stitch Machine, Double needle lock Stitch machine, Parts of single needle Lock stitch machine, Maintenance of machine, Introduction and Importance of Overlock stitch Machine, Classification of Overlock machine, Types of Overlock Stitches, Parts of Overlock stitch Machine. Introduction and types of embroidery machines Types of computerized embroidery machines Advantages for high speed motorized machines for embroidery, Introduction to zigzag machine, Different parts of Zigzag sewing machine, Operating steps of Zigzag sewing

Unit - VII Machines for Attachments

(04 Marks)

Introduction to belt-loop sewing Machine, Introduction and importance of button sewing machine, Parts of button sewing machine, Threading and operating steps of button sewing machine, Introduction and Importance of Buttonhole sewing Machine, Different parts of Buttonhole sewing Machine, Threading and operating steps of buttonhole sewing machine.

Unit – VIII Personal Hygiene & Cleaning and Maintenance at Workplace

(08 Marks)

Introduction and importance to health and hygiene, factors affect the maintenance of good health: physical well-being mental and emotional well-being: social being, Characteristics of well-adjusted people Common danger signals of mal-adjustment, importance of cleaning and maintenance at workplace, Introduction to maintenance, types of maintenance:, Benefits of maintenance, Benefits of clean environment, importance of specialized sewing machines , Steps of cleaning and oiling of specialized sewing machine.

Practical (External):50 Marks

A. Hands on Skill

(15 Marks)

1. Prepare assembly sequence chart on garment like: Long sleeve shirt and Trouser.
2. Prepare a chart on selection of thread, type and needle size for industrial sewing machines, Use various needles and threads and prepare samples, paste in practical file.
3. Labelling the parts of lock stitch machine in practical file.
4. Labelling the parts of overlock stitch machine in practical file.
5. Prepare samples of overlock stitch machine and paste in practical file.
6. Threading and needling embroidery machine, Prepare samples from embroidery machine and paste in practical.
7. Prepare samples from zigzag sewing machine and paste in practical file.
8. Sewing practices on buttonhole sewing machine and prepare samples and paste in practical file.
9. Prepare a chart on factors affecting maintenance of good health.
10. Prepare a chart for cleaning and oiling of sewing machine, Prepare maintenance checklist.

B. Written Test

(10 Marks)

C. Viva Voce

(15 Marks)

D. Student Portfolio / Practical Notebook

(10 Marks)

13. Electronics and Hardware

Job Role: Field Technician Air Conditioner

Level-3(11th)

SCHEME OF ASSESSMENT

This course is a planned sequence of instructions consisting of Units meant for developing employability and vocational competencies of students of Class 11th opting for vocational subject along with general education subjects.

The unit wise distribution of hours and marks for class 11th is as follows:

Class 11th			
Module Part and Name	Unit Name	No. of Hours for Theory and Practical (300)	Max. Marks Theory and Practical (100)
Part - A Employability Skills	Communication & Self-Management Skills-I	45	05
	Basic ICT, Entrepreneurship & Green Skills-I	65	05
Total		110	10
Part – B Vocational Skills	Basic Electricity	30	10
	Basic Electronics	40	10
	Compressor Technology	40	08
	Installation Of Air Conditioner	40	08
	Workplace Safety Measures	15	04
Total		165	40
Part - C Practical Work	Practical Examination	06	15
	Written Test	01	10
	Viva Voce	03	10
Total		10	35
Part-D Project Work /Field Visit	Practical File / Student Portfolio	10	10
	Viva Voce	05	05
Total		15	15
Total		300	100

Theory: 50 Marks

“Part – A”

Employability Skills -----(10 Marks)

Unit – I Communication Skills and Self-Management Skills-I (05 Marks)

Communication, Types of communication, Communication Styles, Greetings & Introduction. Strength and Weakness Analysis, Grooming, Personal Hygiene, Team Work, Goal Setting, Time Management.

Unit – II Basic ICT, Entrepreneurship & Green Skills-I (05 Marks)

Introduction to ICT and ITeS , Word Processing (Create, Edit, Insert, Header/Footer, Save, Close and Print a document in Word Processor).

Entrepreneur and Entrepreneurship, Values of an Entrepreneur, Coming up with a business idea, Understanding the market.

Sectors of Green Economy, Policies for a Green Economy (Green India Mission (GIM)), Stakeholders in Green Economy (Government, Non-Governmental Organizations (NGOs) & Business and Industry).

“Part – B”

Vocational Skills -----(40 Marks)

Unit – III Basic Electricity (10 Marks)

Definition of electricity, Types of electricity – AC, DC Current, Voltage, Resistance Concept of frequency and time period Electrostatics and its laws Concept of magnetic field Comparison between magnetic circuit and electric circuit Electromagnetic induction Electromagnetic force (E.M.F) Ohm’s law, Kirchoff’s law, Faraday’s law Resistors, Capacitors, Inductors- types and types of connections. Concept of resonance circuit, Series RLC and parallel RLC circuit Concept of filter circuit Band stop and band pass filter circuits Power, Maximum power transfer theorem AC motors, DC motors.

Unit – IV Basic Electronics (10 Marks)

Relay, contractor and switches. Color code of resistors and capacitors. Measuring instruments – Multimeter analog and digital, Cathode Ray Oscilloscope (CRO). Semiconductors, PN Diodes, Concept of zener diode, schottky diode, light emitting diode, photo diode, thermistor Bipolar transistors, Field effect transistors, Transistor biasing, Transistor amplifier, CE, CB and CC amplifiers, Power amplifier Oscillators, Multi vibrators. Rectifiers, half wave and full wave rectifiers, Regulated power supply using, zener diode. Integrated Circuits (IC) Classification of Integrated Circuits, Parameters of Integrated Circuits. Introduction to digital electronics Number systems, logic gates, arithmetic circuits, Half adder, full adder. Concept of transducer, Classification of transducer, Thermocouple transducer, NTC, PTC, Inductive transducer, Capacitive transducer, Microphone and loudspeaker

Unit – V Compressor Technology

(08 Marks)

Definition of compressor, Functioning of compressor, Type of compressor. Internal parts of compressor – stator winding, cylinder, piston, valve plate, suction rid, discharge rid, Various terms associated with reciprocating compressor compression stroke, suction stroke, compression ratio, Top dead centre (TDC), Bottom dead centre (BDC), clearance pocket, bypass capacity control, volumetric efficiency, compression speed, capacity control methods. Materials used for compressor components Lubrication of compressor Compressor efficiency Factors affecting compressor Efficiency.

Unit – VI Installation of Air Conditioner

(08 Marks)

Definition of air Conditioner, Requirement of air Conditioner, Calculation of heat load, Tone of refrigeration and British, Thermal Unit (BTU). Refrigeration cycle, Different types of AC, Various brands and models of AC, Different features and functionalities of various AC Models, Energy efficiency ratings (EER) of AC. Definition of refrigerants Characteristics of refrigerants, Safe economical and efficient refrigerants. Refrigerant numbering and color codes, Different types refrigerants such as R22, R32, R410, R600a, R134a, R290, Refrigerant cylinders and valves. Ozone layer and green house effect. Different tools – tester, spanner, wrench, measuring tape, drill machine, pliers, hammer, hacksaw, pipe cutter, screw driver and testing equipment like clamp meter, voltmeter, and other installation and repair tools, Spare parts of AC, Concept of route plan for maximum target achievement. Site visit for AC installation, Wiring diagram, wiring layout for installation, Types of wire to be used as per the current drawing capacity of air conditioner, Pre-installation arrangements, Installation of window and split, AC as per the installation manual. Cost estimation, possible solution and related cost, Customer awareness about the product details, model, specification, functioning, warranty, replacement cost.

Unit – VII Workplace Safety Measures

(04 Marks)

Electrical Earthing , Different hazards related to installation and repair of AC. Safety guidelines while installation and repair of AC. Workplace safety policies and general guidelines. Electrical safety guidelines by using proper personal protective equipment (PPE). Safety and protection equipment such as fire extinguisher, safety instrument and clothing Basic first aid, Types of accident injury or hazard

Practical (External):50 Marks

A. Hands on Skill

(15 Marks)

- 1) Listing do's and don'ts for avoiding common body language mistakes
- 2) Role plays on communication styles.
- 3) Demonstrate the features and functions of word processor.
- 4) Prepare posters on green skills.
- 5) Demonstrate the experiment of magnetic attraction.
- 6) Verify the ohm's law by using ohm's experiment.
- 7) Verify the Kirchhoff's law by using experiment
- 8) Connect the resistor in series and parallel combination and measure effective resistance.
- 9) Perform an experiment to demonstrate the working of AC motor and DC motor.
- 10) Determine the value of resistance by using color code.
- 11) Measure the given AC, DC voltage and current by using multi-meter
- 12) Demonstrate the functioning of compressor.
- 13) Visit the shop or website of AC and list functions of various air conditioners
- 14) Identify the different refrigerants by using color codes. Prepare a chart of the codes.
- 15) Demonstrate the use of safety and protection equipment and first aid.

B. Written Test

(10 Marks)

C. Viva Voce

(15 Marks)

D. Student Portfolio / Practical Notebook

(10 Marks)

14.Plumbing

Job Role: *Plumber (General)*

Level-3(11th)

SCHEME OF ASSESSMENT

This course is a planned sequence of instructions consisting of Units meant for developing employability and vocational competencies of students of Class 11th opting for vocational subject along with general education subjects.

The unit wise distribution of hours and marks for class 11th is as follows:

Class 11th			
Module Part and Name	Unit Name	No. of Hours for Theory and Practical (300)	Max. Marks Theory and Practical (100)
Part - A Employability Skills	Communication & Self-Management Skills-I	45	05
	Basic ICT, Entrepreneurship & Green Skills-I	65	05
Total		110	10
Part – B Vocational Skills	Introduction to the sector & job role	20	05
	Basics of Plumbing	30	09
	Preparation for plumbing installation & maintenance	25	07
	Installation of water supply system	45	10
	Installation of drainage systems	45	09
Total		165	40
Part - C Practical Work	Practical Examination	06	15
	Written Test	01	10
	Viva Voce	03	10
Total		10	35
Part-D Project Work /Field Visit	Practical File / Student Portfolio	10	10
	Viva Voce	05	05
Total		15	15
Total		300	100

Theory: 50 Marks

“Part – A”

Employability Skills -----(10 Marks)

Unit – I Communication Skills and Self-Management Skills-I (05 Marks)

Communication, Types of communication, Communication Styles, Greetings & Introduction. Strength and Weakness Analysis, Grooming, Personal Hygiene, Team Work, Goal Setting, Time Management.

Unit – II Basic ICT, Entrepreneurship & Green Skills-I (05 Marks)

Introduction to ICT and ITeS , Word Processing (Create, Edit, Insert, Header/Footer, Save, Close and Print a document in Word Processor).

Entrepreneur and Entrepreneurship, Values of an Entrepreneur, Coming up with a business idea, Understanding the market.

Sectors of Green Economy, Policies for a Green Economy (Green India Mission (GIM)), Stakeholders in Green Economy (Government, Non-Governmental Organizations (NGOs) & Business and Industry).

“Part – B”

Vocational Skills -----(40 Marks)

Unit-III: Introduction to the sector & job role: (05 Marks)

Importance of plumbing industry, role of water management and plumbing skill council (WMPSC), job opportunities in plumbing industry, duties & responsibilities of plumber, water flow system in domestic and commercial setups, application of various types of plumbing systems in residential and commercial setups.

Unit-IV: Basics of Plumbing: (09 Marks)

Symbols & terminology used in plumbing installations, application of Indian Standards like ISI/BIS in plumbing installations, techniques of accuracy in measurement & calculation of plumbing work, pipes- names, grade, characteristics & applications, pipe fittings, fixture supports, sealants, adhesives, plumber’s putty, plumbing tools, lifting & load shifting equipment like ladders, height scaffolding, elevated work Platforms, hand trolleys, hoist & jacks used at plumbing installations, Importance of water properties, pressure & flow rate, Capillary action and thermal expansion in plumbing

Unit-V: Preparation for plumbing Installation & Maintenance (07 Marks)

Role of plumbing drawings & layout, measurements from drawings in plumbing, importance of planning of work schedule in Plumbing, importance of safe handling & storage of plumbing materials, air & water contamination, erosion & sedimentation, disadvantages and impact of not following defined procedures during work, process of reporting and handling hazards at workplace.

Unit-VI: Installation of water supply system

(10 marks)

Process of water distribution in municipal, residential & private setups, Pipe system layouts for various types of water supply systems, techniques of piping installation in buildings like over-ground piping, underground piping, piping in embedded concrete, concealed piping, wall mounted piping, properties of different types of supports, hangers and restraints used in plumbing, characteristics of Metals used in Plumbing Materials & fabrication methods compatible with them, process of electrolysis and the problem associated with use of dissimilar metals, impact of accurate marking on the fabrication process, work time, & finished work quality, measuring and Marking out process for fabrication of pipes, allowances to be considered in measurement, standard measuring procedures such as center to center, end to center & end to end, Type & characteristics & application of different pipe fittings and fixture supports, Various fixing & joining techniques for water supply piping installation, Principles underlying various fit-off processes, importance of ensuring alignment and balance in piping installations, test procedures to check proper functioning of the pipe work installed, tests to be conducted before commissioning of piping installation, importance of reporting difficulties while working,

Unit-VII: Installation of drainage systems

(09 Marks)

Process of wastewater drainage, function of components of wastewater drainage, types of drainage piping systems and pipes & fittings used thereof, components of drainage piping systems used in buildings, characteristics & applications of different pipe fittings, fixture supports & fastening hardware, importance of fit-off, fixing & joining techniques applicable to drainage pipes, methods of installation of various types of drainage systems such as sewage, sullage, storm-water, sub-soil drainage system, drainage for fixtures, trap & it's types. Pumps used in sanitary & drainage systems & their applications, characteristics of flooring used for installation & drainage of plumbing systems, post-installation & pre-commissioning tests & checks & their importance, signages to be put up at site after completion of task.

Practical (External):50 Marks

A. Hands on Skill

(15 Marks)

1. Draw the symbols of various pipes, fittings & fixtures used in plumbing
2. Identify the names & grade of pipes used.
3. Calculate the quantity, dimensions & types of pipes, fittings & devices & materials required from design specifications in drawing
4. Demonstrate the installation of various components of drainage systems such as various Pipes & their fittings, manholes, traps, clean outs
5. Measure the dimensions such as center to center, end to end & end to center
6. Make a list of signage to be put up on site after finishing of plumbing work.
7. Enlist different sections of school where plumbing work is being carried out and note down the accessories & tools used over there.
8. Practice joining of pipes using plumbing tools.
9. Identify the various fixtures & fittings used in the bathroom.
10. Perform leakage test on pipe assembly.

B. Written Test

(10 Marks)

C. Viva Voce

(15 Marks)

D. Student Portfolio / Practical Notebook

(10 Marks)