

**Syllabi & Courses of Study
of
Vocational Subjects
for
Class 12th (Level-4)**



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SCHEME OF EXAMINATION

Details of Assessment Plan

1. There will be three components of evaluation:
 - a) Knowledge/Theory test
 - b) Continuous & Comprehensive Evaluation (CCE)
 - c) Practical test

2. The marks allocated for each evaluation will be as under:
 - a) Knowledge/Theory test – *60 marks
**(Further divided by 2 to get marks out of 30 at the time of adding up total marks)*
 - b) Continuous & Comprehensive Evaluation (CCE) – 20 marks
 - c) Practical test – 50 marks

S.No.	Method of Assessment	Weightage (Max. Marks)	Minimum Pass Marks	Evaluator
1	Theory/Written Test	30	11	JKBOSE
2	Continuous & Comprehensive Evaluation (CCE)	20	This will be included only if the student qualifies separately in Theory & Practical	School Based by Trainer
3	Practical Test & Oral Test/Viva	50	25	Sector Skill Council(SSC)/JKBOSE
TOTAL		100 Marks		

PRACTICAL ASSESSMENT

INTERNAL ASSESSMENT:

(Continuous and Comprehensive Evaluation (CCE))

DISTRIBUTION	MARKS
CBT (Class Based Test)	10
Classroom Participation	05
Classroom Attendance	05
TOTAL	20

EXTERNAL ASSESSMENT:

DISTRIBUTION	MARKS
Hands on Skill	30
Viva Voce	10
Practical File / Student's Portfolio	10
TOTAL	50

QUESTION DISTRIBUTION

Class: 12th (Level-4)

Max. Marks: 60

Duration: 02:30 Hrs

PATTERN	MARKS	QUESTIONS	TOTAL
Very Short Questions	01	10	10 Marks
Short Type-I Questions	02	07	14 Marks
Short Type-II Questions	03	07	21 Marks
Long Type Questions	05	03	15 Marks
TOTAL		27	60 Marks

1. IT/ITeS

Job Role: Junior Software Developer

Level-4(12th)

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 12th is as follows:

Class 12 th			
Module Part & Name	Unit Name	No. of Hours for Theory and Practical (300)	Maximum Marks Theory and Practical (100)
Part-A Employability Skills	Communication & Self-Management Skills-II	50	05
	Basic ICT, Entrepreneurship & Green Skills-II	60	05
Total		110	10
Part-B Vocational Skills	Software Engineering	35	06
	Python Programming-II	30	02
	Web Application Development	30	02
	Mobile Application Development	30	04
	Emerging Trends and Social Impact	35	06
Total		160	20
Part-C (Internal)	Continuous and Comprehensive Evaluation (CCE): <i>CBT (Class Based Test), Classroom Participation and Classroom Attendance</i>	15	20
Part-D Practical Work (External)	Practical Examination	02	20
	Written Test	01	10
	Viva Voce	02	10
	Practical File / Student Portfolio	10	10
Total		15	50
Total		300	100

Theory: 60 Marks

“Part – A”

Employability Skills------(20 Marks)

Unit – I Communication Skills and Self-Management Skills-II (10 Marks)

Introduction to Listening, Overcoming barriers to active listening, Basic parts of speech (Noun, Pronoun, Verb, Adverb & Adjective).

Introduction to Self-motivation, Positive attitude, Ways to maintain positive attitude, Intrinsic and extrinsic motivation, Personality, Basic personality traits & overcome personality disorders.

Unit – II Basic ICT, Entrepreneurship & Green Skills-II (10 Marks)

Introduction to Spreadsheet & its types, Components of spreadsheet. Presentation software, Steps to Save, Open, Close, & Print the presentation.

Introduction to Entrepreneurship, Qualities of a successful entrepreneur, Types of Entrepreneurs, Barriers to entrepreneurship & Startups.

Introduction to Green jobs & its importance, Green jobs in different sectors (Agriculture, Transportation, Water conservation, Solar & Wind energy, Eco-Tourism, Building & Construction, Solid waste management).

“Part – B”

Vocational Skills------(40 Marks)

Unit – III Software Engineering (12 Marks)

Concepts of Software Engineering: Introduction to software engineering, Need for software engineering, Phases of software development – requirement analysis, system analysis, system design, system implementation, system maintenance.

Software Testing: Introduction to software testing, Types of software testing -Unit Testing, Black Box Testing & White box testing, Concept of beta version and final version.

Unit – IV Python Programming-II (04 Marks)

Iterative Statements: Introduction of Iteration, Types of loops-The for loop, the while loop, Jump statement-break and continue, Loop else statement, Nested loops.

String Manipulation: Introduction, Traversing a string, String operators-Basic, membership and comparison operators, String functions and methods-string.capitalize(),string.lower(),string.upper().

Unit – V Web Application Development (04 Marks)

Basic HTML: Structure of a HTML document, HTML Tags (Head, Title, Body, P, A, Img, br, H1 to H6), Lists (Ordered list, Unordered List), Font size, Font colors, Tables (Basic table tags TABLE,TR,

TD,TH,CAPTION), HTML forms, Form elements(input, label, select, textarea, button).Types of Hyperlinking-Internal and External linking.

Cascading Style Sheets: Introduction to Cascaded Style Sheets(CSS), advantages of CSS, Inline CSS and external CSS, Google Forms.

Data Validation: Introduction to Javascript, Advantages of JavaScript, Client-side javascript, Server-side javascript, Variables, Operators, Conditional statements-if...statement, if...else statement, Loop statements-for, do...while, while loop.

Unit – VI Mobile Application Development (08 Marks)

Mobile Development: A brief history of mobile, The mobile eco-system, Types of mobile applications- Native apps, Mobile web apps, Hybrid apps, Mobile 2.0, Mobile web development, Small computing device requirements.

Android Basics: History of android, Introduction to android, Operating systems-Microsoft windows, Apple IOS, Google's android operating system, Apple Mac operating system, Linux operating system, Android development tools.

Unit – VII Emerging Trends and Social Impact (12 Marks)

Emerging Trends and new Technologies: Introduction to Emerging trends, Artificial intelligence (AI), Machine learning, Big data, Internet of things (IOT), Cloud computing, Cloud services.

Socio Impact on Technology: Introduction to cybercrime, Types of cybercrime, Combatting and preventing cybercrime, Indian Information Technology Act (IT Act), Intellectual property right (IPR)- Copyright, Patent, Trademark, Positive and Negative effects of technology on health.

Practical (External):50 Marks

A. Hand on Skill (30 Marks)

1. Write a program in python to generate prime series.
2. Write a program in python to print all natural no.'s from 1 to 100.
3. Write a program in python to print multiplication table of any number.
4. Write a program in python to calculate sum of digits of a number.
5. Create a form in HTML which should allow you to enter your personal details. (Hint:-Make use of text fields, password field, E-Mail, lists, radio button, checkboxes, submit button).
6. Write a JavaScript program to generate first 10 Fibonacci numbers.
7. Write a JavaScript program to convert Celsius to Fahrenheit.
8. Write a JavaScript program to swap two numbers.

B. Viva Voce (10 Marks)

C. Student Portfolio / Practical Notebook (10 Marks)

2.Retail

Job Role: Trainee Associate

Level-4(12th)

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 12th is as follows:

Class 12 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-II	50	05
	Basic ICT, Entrepreneurship & Green Skills-II	60	05
Total		110	10
Part – B Vocational Skills	Monitoring And Maintaining Store Security	35	06
	Loyalty Schemes To Customers	30	02
	Customer Information System And Customer Retention	30	02
	Process of Credit Application	30	04
	Work In Team And Organisation	35	06
Total		160	20
Part-C (Internal)	Continuous and Comprehensive Evaluation (CCE): <i>CBT (Class Based Test), Classroom Participation and Classroom Attendance</i>	15	20
Part - D Practical Work (External)	Practical Examination	02	20
	Written Test	01	10
	Viva Voce	02	10
	Practical File / Student Portfolio	10	10
Total		15	50
Total		300	100

Theory: 60 Marks

“Part – A”

Employability Skills------(20 Marks)

Unit – I Communication Skills and Self-Management Skills-II (10 Marks)

Introduction to Listening, Overcoming barriers to active listening, Basic parts of speech (Noun, Pronoun, Verb, Adverb & Adjective).

Introduction to Self-motivation, Positive attitude, Ways to maintain positive attitude, Intrinsic and extrinsic motivation, Personality, Basic personality traits & overcome personality disorders.

Unit – II Basic ICT, Entrepreneurship & Green Skills-II (10 Marks)

Introduction to Spreadsheet & its types, Components of spreadsheet. Presentation software, Steps to Save, Open, Close, & Print the presentation.

Introduction to Entrepreneurship, Qualities of a successful entrepreneur, Types of Entrepreneurs, Barriers to entrepreneurship & Startups.

Introduction to Green jobs & its importance, Green jobs in different sectors (Agriculture, Transportation, Water conservation, Solar & Wind energy, Eco-Tourism, Building & Construction, Solid waste management).

“Part – B”

Vocational Skills------(40 Marks)

Unit – III Monitoring and Maintaining Store Security (12 Marks)

Types of security risks in store: Meaning of risk in store, Types of risks and securities in retail store , Cyber security challenges. Measures for safety of employees, Factors for identifying risk,

Company procedure for reporting security risk : Various issues on which reporting is necessary, Reporting through equipment's , robbery and shoplifting , Deactivating security devices of stores , team members and their actions , Elements of loss prevention .

Unit – IV Loyalty Schemes for Customers (08 Marks)

Loyalty schemes: Meaning of loyalty schemes and loyal customers, Goals, types and features of loyalty schemes, Meaning of membership drive for loyalty schemes, Steps to be followed during a membership drive, Concept of propagation of loyalty programme and its methods

Customer relationship management (CRM): Meaning and objectives of CRM, Benefits of CRM, Difference between CRM and E-CRM.

Unit – V Customer Information System and Customer Retention (04 Marks)

Need of communicating information to customer: Retailers policy for providing information and advice to customers, meaning of customer complaints, Machinery for complaints handling , Rights of customer regarding complaints ,Help customer sort out complaints , company policies and procedures for

dealing with complaints .

Customer needs: Significance of recognizing customer's needs, Guidelines for recognizing customer needs ,Advantages of responding the customers on time, meaning of customer retention, Importance of customer retention .

Unit – VI Process of Credit Application

(04 Marks)

Meaning of credit sales: Features and need for credit sales, Retail credit facility, Meaning and need for credit check, meaning of credit requisition, steps involved in the credit requisition

Meaning of credit worthiness: How to check credit worthiness, Techniques used for determining credit worthiness of the customers.

Unit – VII Work in Team & Organisation

(12 Marks)

Organization standard of appearance: Precautions for appearance and behaviour taken by male and female staff, behaviour in organisation, Dealing with the customer, customer service , Meaning of work team and its features and responsibilities of team members ; Development of effective work habits .

Work effectively in retail organisations: Support in effective working, Career prospects in retailing, Job prospects in retail trainee associate and retail sector remuneration, Rights and Responsibilities of employees.

Practical (External):50 Marks

A. Hand on Skill

(30 Marks)

1. Write down the different types of risks and securities in your nearby retail store.
2. Write a note on cyber security and its challenges associated.
3. List down different types of loyalty programs.
4. To identify the features of loyalty schemes.
5. Demonstrate the mechanism and machinery for handling complaints,
6. Role play on different duties of retailers regarding handling complaints.
7. To demonstrate the skills to complete the task.
8. To identify the career prospects in retailing.

B. Viva Voce

(10 Marks)

C. Student Portfolio / Practical Notebook

(10 Marks)

3. Healthcare

Job Role: General Duty Assistant

Level-4(12th)

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 12th is as follows:

Class 12 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-II	50	05
	Basic ICT, Entrepreneurship & Green Skills-II	60	05
Total		110	10
Part – B Vocational Skills	Hospital management system	25	03
	Sterilization & Disinfection	25	03
	Introduction to medication	20	04
	Immunization	25	02
	Physiotherapy	30	02
	Bio medical waste management	20	04
	Medical records/ Documentation	15	02
Total		160	20
Part-C (Internal)	Continuous and Comprehensive Evaluation (CCE): <i>CBT (Class Based Test), Classroom Participation and Classroom Attendance</i>	15	20
Part - D Practical Work (External)	Practical Examination	02	20
	Written Test	01	10
	Viva Voce	02	10
	Practical File / Student Portfolio	10	10
Total		15	50
Total		300	100

Theory: 60 Marks

“Part – A”

Employability Skills------(20 Marks)

Unit – I Communication Skills and Self-Management Skills-II (10 Marks)

Introduction to Listening, Overcoming barriers to active listening, Basic parts of speech (Noun, Pronoun, Verb, Adverb & Adjective).

Introduction to Self-motivation, Positive attitude, Ways to maintain positive attitude, Intrinsic and extrinsic motivation, Personality, Basic personality traits & overcome personality disorders.

Unit – II Basic ICT, Entrepreneurship & Green Skills-II (10 Marks)

Introduction to Spreadsheet & its types, Components of spreadsheet. Presentation software, Steps to Save, Open, Close, & Print the presentation.

Introduction to Entrepreneurship, Qualities of a successful entrepreneur, Types of Entrepreneurs, Barriers to entrepreneurship & Startups.

Introduction to Green jobs & its importance, Green jobs in different sectors (Agriculture, Transportation, Water conservation, Solar & Wind energy, Eco-Tourism, Building & Construction, Solid waste management).

“Part – B”

Vocational Skills------(40 Marks)

Unit – III Hospital Management Systems (06 Marks)

Responsibilities of GDA, Various ways of transporting a patient from OPD to IPD, Purpose and procedure of health assessment, Major components of obstetrical history, importance of culture in health assessment, Explain the significance and purpose of physical examination, Techniques of physical examination, Technique for chest and abdomen examination. Various techniques of collecting the specimen of urine, stool, sputum, blood, etc. specimen of urine, stool, sputum, blood, etc. Use various equipment and supplies in furnishing the patient's unit. Explain the significance and importance of a waste basket in patient's unit .

Unit – IV Sterilization and Disinfection (06 Marks)

Different types of disinfection. Differentiate between concurrent and terminal disinfection. Explain the process of fumigation with sulphur. Importance of care of rubber goods. .Procedure of removing different kinds of stains. Cleaning techniques of different areas of hospital. Role of hand hygiene in prevention of infection. Various cleaning techniques used in hospital. Asepsis and its types. Methods of transmission of infection . .Fumigation procedure in OT. Duties of GDA in OT. Methods and steps of dressing. Explain the general rules of dressing Knowledge of disease, pathogen, infection three vertices of the epidemiological triangle. State the common diseases. Enlist the names of bacteria and viruses causing

diseases in human. Meaning of Hospital Acquired Infection (HAI) . Activities to be performed by GDA for controlling (HAI),Physical agents and chemical agents used in disinfection and sterilization.

Unit – V Introduction to Medication

(08 Marks)

Types of intravenous drug delivery method . Advantages and disadvantages of the various conventional drug delivery systems. Discuss Role of GDA in patient safety. Explain model of patient safety. State sources of hazards in patient's safety in different drug delivery systems. Different routes of administering the drugs in the patient's body. Explain the importance of internal drug delivery route Criteria to choose drug dosage forms. Two main types of capsule. Various drug dosage forms. Novel drug delivery method. Explain DPI and MDI. Tran dermal drug delivery system with its advantage. Classify the controlled drug delivery system on the basis of mechanism of release. Explain drug administration. Classify medicine groups. Legal aspects of record keeping. Enlist different forms of medicine. Importance of forms v/s route in drug administration. Read the instruction on the label of the medicine. Meaning of standard abbreviation used in the medication chart. Common side effects of anti- depressant. Classification of drugs. Enlist the drugs used for dysrhythmia. Categorize the drugs in treatment of cardiovascular system.

Unit – VI Immunization

(04 Marks)

Differentiate between various types of immunity Explain the meaning of Immunity. Differentiate between innate and adoptive immunity. Differentiate between passive, active immunity' Importance of immunization. Side effects of immunization. Various aspects of Immunization schedule chart. Identify the key components of universal immunization programme (UIP), Key components of a Pulse Polio Immunization Programme.

Unit – VII Physiotherapy

(04 Marks)

Explain Physiotherapy. State basic principles of physiotherapy. State basic principles of good body mechanics. Reasons for the use of proper body mechanics. Purpose of exercise. State the precautions to be taken by the patients while performing physical exercises. Define active range of motion (ROM) exercise. Explain the selection criteria of active ROM exercise. Type of active ROM exercises Define passive range of motion exercise. State the care to be taken while giving passive exercises of active ROM exercises. Procedure of breathing exercise. Procedure of coughing exercise. Explain the working of triflo.

Unit – VIII Biomedical Waste Management

(08 Marks)

Define bio- medical waste. Enlist the risks involved in poor waste management in hospital. Importance of hospital waste management with respect to hospital staff and general public. Explain how bio-medical waste management helps in environment protection. Enlist the routes of transmission of infection in hospitals. Enlist the sources of biomedical waste. Method of disposing off of micro biological and bio technological waste in hospital. Explain autoclaving and shredding. Transportation process of bio-medical waste. Procedure of treatment of general waste and biomedical waste in hospital 4. State the importance of color coding criteria recommended by WHO. State the functions of hospital waste management committee. Duties of medical superintendent regarding bio- medical waste management. Importance of training on hospital waste management to different categories of staff in a hospital.

Unit – IX Medical Records

(04 Marks)

Explain the purpose of health service planning, Importance of documentation in assuring quality services to patients. Explain the importance of mentioning the date and time during recording . Importance of confidentiality in maintaining medical record of the patient. Describe the procedure of making corrections and omissions in healthcare documents. Explain LAMA. Explain change of shift note . Purpose of transfer and discharge note. Role of GDA in maintaining record. Explain different format and methods of documentation. Enlist the documents maintained by the hospital in MLC and RTA cases. Explain POMR.

Practical (External):50 Marks

A. Hand on Skill

(30 Marks)

1. Performing medical examination/Health assessment.
2. Performing physical examination.
3. Demonstrate hand washing.
5. Demonstrate CPR.
6. Demonstrate surgical dressing/ surgical tray.
7. Demonstrate use of personal protective Equipment (i.e. Gowning, Gloving, wearing a mask etc)
8. Demonstrate the various routes of drug administration.
9. Demonstrate the various forms of drug administration.
10. Preparation of immunization schedule.
11. Techniques of physiotherapy.
12. Demonstrate breathing exercises.
13. Demonstrate the techniques of active ROM exercises.
14. Demonstrate the disposal techniques of biomedical waste.
15. Proper documentation format.
16. Measuring the body temperature using various types of thermometers.
17. Measure Pulse Rate of a patient.
18. Measure Respiratory rate of a patient.
19. Measure B.P of patient.
20. Demonstrate the various positions of the patient.

B. Viva Voce

(10 Marks)

C. Student Portfolio / Practical Notebook

(10 Marks)

4.Tourism & Hospitality Management

Job Role: Customer Service Executive (Meet & Greet)

Level-4(12th)

SCHEME OF ASSESSMENT

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Class 12 th			
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Part - A Employability Skills	Communication & Self-Management Skills-II	50	05
	Basic ICT, Entrepreneurship & Green Skills-II	60	05
Total		110	10
Part – B Vocational Skills	Etiquette & Hospitable conduct	36	06
	Gender & Age Sensitive service practices	27	02
	Health & Hygiene	27	02
	Safety at Work Place	30	04
	Learn a foreign or local language & Customer Centric Service	40	06
Total		160	20
Part-C (Internal)	Continuous and Comprehensive Evaluation (CCE): <i>CBT (Class Based Test), Classroom Participation and Classroom Attendance</i>	15	20
Part - D Practical Work (External)	Practical Examination	02	20
	Written Test	01	10
	Viva Voce	02	10
	Practical File / Student Portfolio	10	10
Total		15	50
Total		300	100

Theory: 60 Marks

“Part – A”

Employability Skills------(20 Marks)

Unit – I Communication Skills and Self-Management Skills-II (10 Marks)

Introduction to Listening, Overcoming barriers to active listening, Basic parts of speech (Noun, Pronoun, Verb, Adverb & Adjective).

Introduction to Self-motivation, Positive attitude, Ways to maintain positive attitude, Intrinsic and extrinsic motivation, Personality, Basic personality traits & overcome personality disorders.

Unit – II Basic ICT, Entrepreneurship & Green Skills-II (10 Marks)

Introduction to Spreadsheet & its types, Components of spreadsheet. Presentation software, Steps to Save, Open, Close, & Print the presentation.

Introduction to Entrepreneurship, Qualities of a successful entrepreneur, Types of Entrepreneurs, Barriers to entrepreneurship & Startups.

Introduction to Green jobs & its importance, Green jobs in different sectors (Agriculture, Transportation, Water conservation, Solar & Wind energy, Eco-Tourism, Building & Construction, Solid waste management).

“Part – B”

Vocational Skills------(40 Marks)

Unit – III Etiquette and Hospitable Conduct (12 Marks)

Hospitality & Need of Hospitable Conduct. Goal of Hospitality. Components of Hospitality. Customer Centricity. Role of Food and Beverage Service in a hospitable conduct.

Define, need and necessities of etiquettes and Manners. Telephone Etiquettes, Language, Positive Body Language and good hospitable Dressing and Uniform sense. Precautions to be taken while dealing with the Guest.

Customer Grievances and complaints handling. Special Attention Guest. How to Measure Customer satisfaction. Customer Contribution to the Brand Value.

Unit – IV Gender and Age Sensitive Service Practices (04 Marks)

Women’s rights and respect at workplace. Company’s policies to prevent sexual harassment. Facilities available at work for female colleagues such as transport, night drop, night shifts, reporting abuse, maternity leaves and other grievances. Recreational facilities for children tourist.

Motivating women at workplace to utilize their skills such as involvement in decision making process. Behavioural etiquettes while dealing with female colleagues and guests.

Unit – V Health and Hygiene

(04 Marks)

Regular cleaning of work area. Handling waste waste/trash can. Handling pest control activities at work place. Proper ventilation of area. Cleaning of food storage, prepared, displayed and serving area. Standard Operating Procedure for: Safe cleaning. Importance of identification and reporting of poor organizational practices. Importance of food sanitation and cross contamination of food and precaution during the food production and food service. Regular hand washing procedure. Thumb rule for regular personal hygiene. Maintain personal hygiene, grooming, dental care, Importance of reporting personal health issues. Thumb rule for taking precautionary health measures.

Unit – VI Safety at Workplace

(08 Marks)

Assessing F&B workplace Hazards. Minimization of food service place hazards. Hotel evacuation procedures for fire, bomb threats, and mass destruction. Knowledge of storage Area: Safe Lifting Techniques in Banquets, Storage of acids & chemicals, Safety techniques for Handling, lifting and moving furniture and fixtures in Restaurants and in food service area. Standard Safety Procedure for Handling Electrical tools. Standard Safety Procedure for Handling floors Standard Safety Procedure for handling sharp Tools. First aid kits in the work place. Handling of Personal Protective Equipment's. Safety use of P.P.E for specific task on service area and display safety signs where necessary.

Unit – VII Learn a foreign or local language(s) including English and Customer-Centric Services

(12 Marks)

Role of English in hospitality industry. Role of foreign language in hospitality industry. Communication with colleagues. Speaking without hesitation and fear of being in correct. Sharing and solving of complaints. Vocabulary and expressions. Language proficiency to 'working knowledge' level.

Definition, type of customer and customer profile. Target customer and their needs. Customer relation and complaints. Customer views, reviews on product and services and expectations. Use of customer feedback, complaints & rating for improvements. Customer behaviour, loyalty and dealing with customer without disturbing his privacy.

Providing honesty and transparency to customer while dealing. Treating customer with due respect and fairly. Implementation of market strategy for market development. Customer needs wants, expectations and their fulfilments. Introduction of new product and service and customer satisfaction. Feedback cycle and dealing with the negative feedback. Customer retention and offer promotion to improve customer satisfaction.

Practical (External):50 Marks

A. Hand on Skill

(30 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.Viva Voce

(10 Marks)

C.Student Portfolio / Practical Notebook

(10 Marks)

4. Tourism & Hospitality Management

Job Role: Food and Beverage Services Steward

Level-4(12th)

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 12th is as follows:

Class 12 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-II	50	05
	Basic ICT, Entrepreneurship & Green Skills-II	60	05
Total		110	10
Part – B Vocational Skills	Resolving Customer Service Issues.	40	04
	Give a positive impression of oneself & the organization	40	06
	Work effectively with others	35	04
	Maintenance of safe secure and hygienic environment	45	06
Total		160	20
Part-C (Internal)	Continuous and Comprehensive Evaluation (CCE): <i>CBT (Class Based Test), Classroom Participation and Classroom Attendance</i>	15	20
Part - D Practical Work (External)	Practical Examination	02	20
	Written Test	01	10
	Viva Voce	02	10
	Practical File / Student Portfolio	10	10
Total		15	50
Total		300	100

Theory: 60 Marks

“Part – A”

Employability Skills------(20 Marks)

Unit – I Communication Skills and Self-Management Skills-II (10 Marks)

Introduction to Listening, Overcoming barriers to active listening, Basic parts of speech (Noun, Pronoun, Verb, Adverb & Adjective).

Introduction to Self-motivation, Positive attitude, Ways to maintain positive attitude, Intrinsic and extrinsic motivation, Personality, Basic personality traits & overcome personality disorders.

Unit – II Basic ICT, Entrepreneurship & Green Skills-II (10 Marks)

Introduction to Spreadsheet & its types, Components of spreadsheet. Presentation software, Steps to Save, Open, Close, & Print the presentation.

Introduction to Entrepreneurship, Qualities of a successful entrepreneur, Types of Entrepreneurs, Barriers to entrepreneurship & Startups.

Introduction to Green jobs & its importance, Green jobs in different sectors (Agriculture, Transportation, Water conservation, Solar & Wind energy, Eco-Tourism, Building & Construction, Solid waste management).

“Part – B”

Vocational Skills------(40 Marks)

Unit 3: Resolving Customer Service Issues. (8 Marks)

Listing and understanding the customer problems. Discussion about the problem with the customer. Informing and assuring about the problem solution. Satisfaction of customer by having best solution. Analysis of problem, solution and feedback collection. Inability to deliver best option of solution for any problems.

Behavior while dealing with the customer. Providing the best available solutions to customers/guests. SOP to deliver best solutions/information's to guest. Dealing with other guests while dealing the guest problems.

Unit 4: Give a positive impression of oneself and the organization (12 Marks)

Effective communication role in greeting the guest. Using friendly manner and good behavior to assure guest and repeat business.

Dealing with guest queries and complaints. Choosing best way of communication for effective and impressive communication. Explanation about products and services to the customers. Sharing issue with senior and management. Image building of products and services and organization.

Importance of prompt response to problem and solution . Explanation about the required time for problem solution. Policy and guidelines to deal with the customer problems.

Unit 5: Work effectively with others

(8 Marks)

Politeness and respect while talking to the guest. Instruction command and line organization. Multi-tasking and way to improve productivity. Personality, behavior, and sincerity. Keeping the promises and work target achievements. Skills required to deal with the guest (apart from communication). Disciplined behavior at work place. Communication barrier and overcoming.

Respect showing by: • Punctuality • Completing task on time • Eliminating waste • Integrity . Fulfillment of commitment to work effectively. Active listening skills and escalation of grievances of customers to seniors.

Unit 6: Maintenance of Safe Secure and Hygienic Environment

(12 Marks)

Points to remember to maintain good appearance. Workplace Hazards from equipment's and its prevention. Managing emergency situations. . PPE using, storage and advantages. Sign of safety and its usefulness in the industry.

Equipment operations and precautions. Lifting of weight, follow of safety procedure while working in confined place. Type of fire and fire extinguishers. Role of fire exit and first aid. Importance of training in prevention of emergencies like fire, bomb threat etc.

Dealing with emergencies like choking, electrical shocks and poisoning. Medical Aids, CPR Used during emergencies. Correct procedure for hospitalization and medical facilities. Making of accidental and emergency reports.

Practical (External):50 Marks

A. Hand on Skill

(30 Marks)

1. Listening activities.
2. Receiving and seeing of the guests.
3. Techniques of receiving feedback.
4. Personality & Grooming techniques/skills.
5. Handling & usage of fire extinguishers.
6. Demonstration of PPE kits.
7. Mock drill preparation for Natural Disaster Emergencies.
8. Demonstration of CPR & First-Aids during emergency.

B. Viva Voce

(10 Marks)

C. Student Portfolio / Practical Notebook

(10 Marks)

5. AGRICULTURE

Job Role: Organic Grower

Level-4(12th)

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 12th is as follows:

Class 12 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-II	50	05
	Basic ICT, Entrepreneurship & Green Skills-II	60	05
Total		110	10
Part – B Vocational Skills	Harvesting and Post Harvesting Technology.	60	10
	Standards and Certification in Organic Farming	60	05
	Marketing of Organic Produce	40	05
Total		160	20
Part-C (Internal)	Continuous and Comprehensive Evaluation (CCE): <i>CBT (Class Based Test), Classroom Participation and Classroom Attendance</i>	15	20
Part - D Practical Work (External)	Practical Examination	02	20
	Written Test	01	10
	Viva Voce	02	10
	Practical File / Student Portfolio	10	10
Total		15	50
Total		300	100

Theory: 60 Marks

“Part – A”

Employability Skills----- (20 Marks)

Unit – I Communication Skills and Self-Management Skills-II (10 Marks)

Introduction to Listening, Overcoming barriers to active listening, Basic parts of speech (Noun, Pronoun, Verb, Adverb & Adjective).

Introduction to Self-motivation, Positive attitude, Ways to maintain positive attitude, Intrinsic and extrinsic motivation, Personality, Basic personality traits & overcome personality disorders.

Unit – II Basic ICT, Entrepreneurship & Green Skills-II (10 Marks)

Introduction to Spreadsheet & its types, Components of spreadsheet. Presentation software, Steps to Save, Open, Close, & Print the presentation.

Introduction to Entrepreneurship, Qualities of a successful entrepreneur, Types of Entrepreneurs, Barriers to entrepreneurship & Startups.

Introduction to Green jobs & its importance, Green jobs in different sectors (Agriculture, Transportation, Water conservation, Solar & Wind energy, Eco-Tourism, Building & Construction, Solid waste management).

“Part – B”

Vocational Skills----- (40 Marks)

Unit – III Harvesting and Post Harvesting Technology (20 Marks)

Maturity and ripening in crops (definitions); Factors affecting maturity of crops; Maturity indices ;Different methods of harvesting(Manual harvesting and mechanical harvesting), Stage of harvesting of different agricultural crops(rice, wheat, pulses); Harvesting equipments; Methods of harvesting in fruits(Snap picking, clipping), harvesting of leafy vegetables(cabbage, spinach and lettuce), Harvesting of flowers(Rose, gladiolus, carnation), equipments used for harvesting; Precaution to be taken during harvesting; Waste management (definition), methods of waste disposal (Mulching, burning, use as compost, use as animal feed), pre-storage treatments(precooling, curing, labeling, packaging and storage) Packaging (Definition), Types of packing materials, Ideal Storage conditions(temperature, moisture), Describe the methods of storage for organic produce(Ground storage, storage in ware houses, refrigerated storage, zero energy storage, hypobaric storage and controlled and modified atmospheric storage.

Unit – IV Standards and Certification in Organic Farming (10 Marks)

FOOD (Definition); Factors affecting food quality; National Programme for organic production and produce (silent features, Aims); Definition and importance of Record keeping; certification of organic produce. Organic Product Certificate; Certification Agencies; Indian Logo for Organic Products. Agriculture and processed food products export development authority (APEDA) and its silent features.

The process of inspection and certification of organic food in India.

Unit – V Marketing of Organic Produce

(10 Marks)

Business and its types (Sole proprietorship, Partnership); Government schemes for organic farming; Market(Definition), Describe the marketing functionaries, enlist various agencies involved in agricultural marketing, Marketing channels; E-mail marketing campaigns; National Agricultural cooperative marketing federation(NAFED), National Centre for Organic Farming (NCOF), National Mission for sustainable agriculture(NMSA), Mission Organic Value Chain Development for North-Eastern Region (MOVCD-NER), marketing and promotion of organic farming and organic produce; Strategies on product, price, promotion and distribution

Practical (External):50 Marks

A. Hand on Skill

(30 Marks)

- 1.Group discussion on the factors influencing the maturity of crops
- 2.Identification of stage of harvesting of different agricultural crops.
- 3.Demonstration of the use of harvesting tools and equipments.
- 4.Group discussion on the precautions to be taken on harvesting, time of harvesting of various crops, and discussion on the post-harvest activities.
- 5.Visit to a warehouse/Processing unit for understanding the various procedures adopted for grading, packaging and storage of agricultural produce.
- 6.Preparation of charts showing the requirement of storage conditions, such as temperature, humidity, etc. for various organic produce.
- 7.Importance of record keeping.
- 8.Visit to an organic farm for understanding record keeping.

B. Viva Voce

(10 Marks)

C. Student Portfolio / Practical Notebook

(10 Marks)

5.Agriculture

Job Role: Dairy Farmer

Level-4(12th)

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 12th is as follows:

Class 12 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-II	50	05
	Basic ICT, Entrepreneurship & Green Skills-II	60	05
Total		110	10
Part – B Vocational Skills	Conservation of forages	35	06
	Maintaining healthy performance of livestock	30	02
	Performing hand and machine milking	30	02
	Maintaining health and safety standard at the work place	30	04
	Entrepreneurship	35	06
Total		160	20
Part-C (Internal)	Continuous and Comprehensive Evaluation (CCE): <i>CBT (Class Based Test), Classroom Participation and Classroom Attendance</i>	15	20
Part - D Practical Work (External)	Practical Examination	02	20
	Written Test	01	10
	Viva Voce	02	10
	Practical File / Student Portfolio	10	10
Total		15	50
Total		300	100

Theory: 60 Marks

“Part – A”

Employability Skills------(20 Marks)

Unit – I Communication Skills and Self-Management Skills-II (10 Marks)

Introduction to Listening, Overcoming barriers to active listening, Basic parts of speech (Noun, Pronoun, Verb, Adverb & Adjective).

Introduction to Self-motivation, Positive attitude, Ways to maintain positive attitude, Intrinsic and extrinsic motivation, Personality, Basic personality traits & overcome personality disorders.

Unit – II Basic ICT, Entrepreneurship & Green Skills-II (10 Marks)

Introduction to Spreadsheet & its types, Components of spreadsheet. Presentation software, Steps to Save, Open, Close, & Print the presentation.

Introduction to Entrepreneurship, Qualities of a successful entrepreneur, Types of Entrepreneurs, Barriers to entrepreneurship & Start-ups.

Introduction to Green jobs & its importance, Green jobs in different sectors (Agriculture, Transportation, Water conservation, Solar & Wind energy, Eco-Tourism, Building & Construction, Solid waste management).

“Part – B”

Vocational Skills------(40 Marks)

Unit – III Conservation of forages (04 Marks)

Fodder crops and their harvesting, Fodder crops on the basis of season, common fodder crops grown in India, harvesting of fodder crops, purpose of harvesting, methods of harvesting, methods of conservation of forages and assessing their quality, tool and equipments for forage conservation, methods of forage conservation, assessing the quality of conserved forages, assessing the requirement of conserved fodder,

Unit –IV Maintaining healthy performance of Livestock (12 Marks)

Maintaining the well being of dairy animals, Animal freedom, Animal welfare, Maintaining healthy and hygienic conditions, Abnormal behaviour in dairy animals, prevention and control of parasitic infections, endoparasites, deworming, administering deworming, harmful effects on dairy animals, common ectoparasites, control of ectoparasites, methods to check ectoparasites, precautions during medicine application, management practises for maintaining animal productivity, animal identification methods, when and how to inseminate, direct methods of pregnancy detection, management of calf from birth, colostrum feeding, removal of supernumerary teats, dehorning, castration, farm record.

Unit – V Performing hand and machine milking (04 Marks)

Structure of udder, milk, milk letdown and milking of dairy animals, physiology and process of milk letdown, hindrance in milk letdown, pre milking activities, milking and methods of milking, difference among hand and machine milking and suckling post milking activities, factors effecting milk composition and production, feeding, clean milk production and prevention mastitis in dairy animals, cleaning of

animal shed and surroundings, Mastitis detection methods, control and prevention of mastitis.

Unit – VI Maintaining health and safety standard at the work place (08 Marks)

Hygiene and bio security in a dairy farm and disposal of carcass, safe handling of equipment and animals, biosecurity, cleaning and disinfecting the farm, disposal of carcass, composting, rendering, fermentation, first aid for dairy animals, transmission of infectious diseases, roots of disease transmission, preventing transmission of diseases, controlling transmission of disease, indigestion and anorexia, constipation, sun stroke, management of wounds, prolapse of uterous,

Unit – VII Entrepreneurship (12 Marks)

Fundamentals of entrepreneurship of dairy business, agribusiness incubation, entrepreneurship opportunities in the dairy sector, categories of dairy entrepreneurs, steps for becoming a dairy entrepreneur, fundamentals of dairy economics and finance, economics aspects in dairy farming, factors influencing dairy economics, starting a dairy business, preparing a dairy business plan, common lending terms of financial institutions, marketing of imports and outputs in dairy business, marketing of milk and milk products, developing confidence among market players.

Practical (External):50 Marks

A. Hand on Skill (30 Marks)

1. Prepare the herbarium sheet of seasonal fodder crops and write their nutritive value in terms of protein content.
2. Demonstrate the process of Hay making.
3. Visit nearby dairy farm and evaluate the health of cows based on the sign you observe on them.
4. Identify ectoparasites in a nearby dairy farm.
5. Visit the dairy farm and note down the calf management practices being followed there.
6. Demonstrate the cleaning and disinfection of dairy farm.
7. Demonstrate the steps to control the transmission of infectious in dairy animals.

B. Viva Voce (10 Marks)

C. Student Portfolio / Practical Notebook (10 Marks)

6. Telecommunication

Job Role: Optical Fibre Technician

Level-4(12th)

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 12th is as follows:

Class 12 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-II	50	5
	Basic ICT, Entrepreneurship & Green Skills-II	60	5
Total		110	10
Part – B Vocational Skills	Introduction to Optical Fiber Industry	30	6
	Optical Fiber Cable and Tools	40	6
	Installation of Optical Fiber Cable	45	4
	Fault Restoration, Safety Measures and Networking	45	4
Total		160	20
Part-C (Internal)	Continuous and Comprehensive Evaluation (CCE): <i>CBT (Class Based Test), Classroom Participation and Classroom Attendance</i>	15	20
Part - D Practical Work (External)	Practical Examination	02	20
	Written Test	01	10
	Viva Voce	02	10
	Practical File / Student Portfolio	10	10
Total		15	50
Total		300	100

Theory: 60 Marks

“Part – A”

Employability Skills------(20 Marks)

Unit – I Communication Skills and Self-Management Skills-II (10 Marks)

Introduction to Listening, Overcoming barriers to active listening, Basic parts of speech (Noun, Pronoun, Verb, Adverb & Adjective).

Introduction to Self-motivation, Positive attitude, Ways to maintain positive attitude, Intrinsic and extrinsic motivation, Personality, Basic personality traits & overcome personality disorders.

Unit – II Basic ICT, Entrepreneurship & Green Skills-II (10 Marks)

Introduction to Spreadsheet & its types, Components of spreadsheet. Presentation software, Steps to Save, Open, Close, & Print the presentation.

Introduction to Entrepreneurship, Qualities of a successful entrepreneur, Types of Entrepreneurs, Barriers to entrepreneurship & Startups.

Introduction to Green jobs & its importance, Green jobs in different sectors (Agriculture, Transportation, Water conservation, Solar & Wind energy, Eco-Tourism, Building & Construction, Solid waste management).

“Part – B”

Vocational Skills------(40 Marks)

Unit – III : Introduction to Optical Fiber Industry (12 Marks)

Understand the opportunities in the broadband industry: Opportunities in the broadband industry – global and local scenario, Role of optical fiber technician in telecom industry, Duties and responsibilities of optical fibre technician, History and evolution of fibre optic communication, Advantages of fibre optic Communication in telecom industry.

OFC route plan and site inspection for safe and secure cable installation: OFC route plan, Route inspection, Route diagrams, and Different site conditions, Cable laying process in the various site conditions, Safety and security of site, various parameters to inspect the site.

Unit – IV Optical Fibre Cable and Tools (12 Marks)

Types of optical fibre: Structure of optical fibre and its types – glass fibres, plastic fibres, fibre sizes. Types of fibre based on modes of propagation – single mode and multi-mode fibre, step index and graded index fibre, Attenuation and dispersion, Indoor and outdoor cables, distribution cable, breakout cable, Armored cable, messenger cable, submarine cable, short and long run cables, hybrid and composite cables. NEC Standards for optical fibre, Cable markings and Colour codes in optical fibre cables.

Fibre optic cable specification: Tensile strength, bend radius, crush and impact, Diameter of optical fibre.

Identify and use fibre optic tools in tool kit: Basic Hand Tools - screwdriver, cable cutting knife, Plier, scissors. Round tube cutter, Electrical tape, optical fibre stripper, Splicing tools - optical fibre splicing machine, cleaver (scribe and precision), protection sleeve, mechanical splice connector, Matching Gel, clamp spring, Cleaning Tools - Cleaning swab, Tissue paper, Isopropyl alcohol, Testing tools – OTDR, Tools for installing cables -Tubing cutter, Rotary cable slitting and ringing tool, cable jacket stripper, Buffer tube stripper, Termination kit -connectors and its types, Optical Spectrum Analyser and its type.

Unit – V Installation of Optical Fibre Cable

(08 Marks)

Handling of OFC cable: Factors effecting fibre optic cable – natural and man-made factors, Cable drum, Cable storage and handling, Inspection of the cable drum and OFC cable.

Cable installation process: Installation through trenching, aerial, Ducting process, Conduct figure 8' ing', Cable pulling and blowing, Fibre optic cable pull boxes, OFC preparation - Cable Jacket removal, Removal of jacket using wire stripper.

Post implementation of fibre cable laying: Splicing procedure – Fusion and Mechanical splicing process, testing of splicing, troubleshooting splicing, OFC termination, Splice trays, Splice enclosures.

Unit – Fault Restoration, Safety Measures and Networking

(08 Marks)

OFC testing using visual fault locator: Fault notification – process and guidelines, Fault localization and restoration, Rectification of faults, Results of investigation, and Reproduction of cable damage.

Observation of safety measures during installation of OFC: Material and chemical safety, Underground safety, Working safety, Using personal protective equipment (PPE's) – helmet, eye and face protection. Safety from LASER light, Ladder safety, Fibre safety in a trench.

Optical networking: Li – Fi Technology, Free Space Optics (FSO), Digital Television, Closed Circuit Television.

Practical (External):50 Marks

A. Hand on Skill

(30 Marks)

1. Creating a new worksheet, Resizing fonts and styles, Copying and move the cell data.
2. Create a list of students of your school in excel.
3. Sort and Filter the list of students class wise, gender wise and soon.
4. Creating a new presentation on a given topic.
5. Prepare colourful posters on green jobs.
6. Draw the route plan and diagram for given site conditions.
7. Identify and name different types of cables used in transmission media.
8. Demonstrate the color-coding scheme for individual fibres bundled in a cable.
9. Identify and name the tools in fibre optics tool kit.
10. Demonstrate the methods of cable storage and its handling.
11. Demonstrate to install fibre optic cable in splice tray.
12. Demonstrate use the personal protective equipment
13. Demonstrate the working of CCTV camera.

B. Viva Voce

(10 Marks)

C. Student Portfolio / Practical Notebook

(10 Marks)

7. Media & Entertainment

Job Role: Texturing Artist

Level-4(12th)

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 12th is as follows:

Class 12 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 Skills and Self-Management Skills-II	50	05
	Basic ICT, Entrepreneurship & Green Skills-II	60	05
Total		110	10
Part-B Vocational Skills	3D Animation	60	07
	Surface Shading and Maps	60	08
	Rendering, Compositing and File Formats	40	05
Total		160	20
Part-C (Internal)	Continuous and Comprehensive Evaluation (CCE): <i>CBT (Class Based Test), Classroom Participation and Classroom Attendance</i>	15	20
Part - D Practical Work (External)	Practical Examination	02	20
	Written Test	01	10
	Viva Voce	02	10
	Practical File / Student Portfolio	10	10
Total		15	50
Total		300	100

Theory: 60 Marks

“Part – A”

Employability Skills------(20 Marks)

Unit – I Communication Skills and Self-Management Skills-II (10 Marks)

Introduction to Listening, Overcoming barriers to active listening, Basic parts of speech (Noun, Pronoun, Verb, Adverb & Adjective).

Introduction to Self-motivation, Positive attitude, Ways to maintain positive attitude, Intrinsic and extrinsic motivation, Personality, Basic personality traits & overcome personality disorders.

Unit – II Basic ICT, Entrepreneurship & Green Skills-II (10 Marks)

Introduction to Spreadsheet& its types, Components of spreadsheet. Presentation software, Steps to Save, Open, Close, & Print the presentation.

Introduction to Entrepreneurship, Qualities of a successful entrepreneur, Types of Entrepreneurs, Barriers to entrepreneurship & Startups.

Introduction to Green jobs & its importance, Green jobs in different sectors (Agriculture, Transportation, Water conservation, Solar & Wind energy, Eco-Tourism, Building & Construction, Solid waste management).

“Part – B”

Vocational Skills------(40 Marks)

Unit-III 3D ANIMATION (14 Marks)

Main menu bar of 3D software (character’s and objects that are developed on 3D), Surface types and in 3D, Compositing after the output, Roles and responsibilities of a Texturing Artist, Textures and shaders used for texturing, Surface materials - types and material nodes, Creating a real life 3D model, Develop a 3D real life model, Identify the properties of surface material, Effect of lighting conditions on different surfaces, including the reflection and refraction.

Unit-IV SURFACE SHADING AND MAPS (16 Marks)

Surface shading properties, Shading network in Autodesk Maya, Creating and assigning materials to shader to surface in Autodesk, Types of texture maps ,Explain the purpose of various types of maps in texturing, UV Texture mapping in Autodesk MAYA, Process of creating bump maps, Creating specular maps in Photoshop, Creating seamless textures in Photoshop.

Unit-IV RENDERING, COMPOSITING AND FILE FORMATS (10 Marks)

Methods of rendering, performing basic rendering process, Perform basic compositing process, File formats used in production pipeline, Texture library, Quick texturing, Colouring particles.

Practical (External):50 Marks

A. Hand on Skill

(30 Marks)

1. Demonstrate essential skills movie window in Autodesk Maya
2. Draw 3D animation in Maya.
3. Demonstrate the various type of surface materials
4. Demonstrate the various type of surface materials
5. Demonstrate the effect of lighting conditions on surfaces
6. Identify surface shading and its properties
7. Demonstrate shading network in Autodesk Maya
8. Demonstration of assigning and creation of materials at various
9. Demonstrate Seamless Textures in Photoshop
10. Demonstrate rendering and Compositing
11. Working with file formats

B. Viva Voce

(10 Marks)

C. Student Portfolio/Practical Notebook

(10 Marks)

8.Beauty and Wellness

Job Role: Beauty Therapist

Level-4(12th)

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 12th is as follows:

Class 12 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-II	50	05
	Basic ICT, Entrepreneurship & Green Skills-II	60	05
Total		110	10
Part – B Vocational Skills	Makeup services	60	08
	Facial beauty services	30	04
	Salon reception duties	30	03
	Creating positive impression at workplace	40	05
Total		160	20
Part-C (Internal)	Continuous and Comprehensive Evaluation (CCE): <i>CBT (Class Based Test), Classroom Participation and Classroom Attendance</i>	15	20
Part - D Practical Work (External)	Practical Examination	02	20
	Written Test	01	10
	Viva Voce	02	10
	Practical File / Student Portfolio	10	10
Total		15	50
Total		300	100

Theory: 60 Marks

“Part – A”

Employability Skills------(20 Marks)

Unit – I Communication Skills and Self-Management Skills-II (10 Marks)

Introduction to Listening, Overcoming barriers to active listening, Basic parts of speech (Noun, Pronoun, Verb, Adverb & Adjective).

Introduction to Self-motivation, Positive attitude, Ways to maintain positive attitude, Intrinsic and extrinsic motivation, Personality, Basic personality traits & overcome personality disorders.

Unit – II Basic ICT, Entrepreneurship & Green Skills-II (10 Marks)

Introduction to Spreadsheet & its types, Components of spreadsheet. Presentation software, Steps to Save, Open, Close, & Print the presentation.

Introduction to Entrepreneurship, Qualities of a successful entrepreneur, Types of Entrepreneurs, Barriers to entrepreneurship & Startups.

Introduction to Green jobs & its importance, Green jobs in different sectors (Agriculture, Transportation, Water conservation, Solar & Wind energy, Eco-Tourism, Building & Construction, Solid waste management).

“Part – B”

Vocational Skills------(40 Marks)

Unit – III Make Up Services (14 Marks)

Basic skin types , Basic skin tone , Types of makeup products:- (Foundation , Powder ,Blusher , Mascara ,Eye shadows , Eye liner, Eyebrow pencil, Lip liner ,Lip stick/gloss) ,Application of foundation, Application of concealer, Application of face powder/loose powder, Application of blusher/shader/highlighter , Application of eye shadow , Application of eyeliner, Application of lip pencil, Application of lipstick ,Various styles of Bindi:- (Snake style ,Letter style,Question mark style) , Various styles of draping Sarees /Draping a Lehenga Dupatta.

Unit – IV Facial Beauty Services (08 Marks)

Benefits of steaming , Procedure of steaming , Facial Massage , Benefits of using right kind of electric Brush , Galvanic electro facial skin treatment.

Unit – V Salon Reception Duties (08 Marks)

Appointment bookin, Scheduling appointments , Handling clients , Store area management ,Waiting area management , Retail area management.

Unit – VI Create A Positive Impression at Workplace (10 Marks)

Reception area and salon staff room management , Creation of a caring and comforting environment , Code of conduct and professional etiquettes , Working as an effective team member, Personal hygiene,

Uniform and work accessories – Personal Protective Equipment , Maintaining good health and posture ,Professional etiquettes.

Practical (External):50 Marks

A. Hand on Skill

(30 Marks)

- 1: Identification of skin types
- 2: Application of foundation, concealer, face powder, eye shadow, lip pencil etc.
- 3: Group discussion on the advantages and disadvantages of various products used for makeup.
- 4: Demonstration of removal of makeup using toner, cold cream and cleansing oil
5. Demonstration of facial steaming
- 6: Demonstration of selection of products for makeup
- 7: Demonstration of bleach preparation and application
- 8: Threading procedure
- 9: Demonstration of Draping Saree or Lehanga
- 10:Facial Massage
- 11: Demonstration of procedures for maintaining personal hygiene.

B.Viva Voce

(10 Marks)

C.Student Portfolio / Practical Notebook

(10 Marks)

9. Physical Education & Sports

Job Role: Fitness Trainer

Level-4(12th)

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 12th opting for vocational subject along with general education subjects.

The unit-wise distribution of hours and marks for Class 12th is as follows:

Class 12 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	Diet	40	06
	Kinesiology and Physiology	35	06
	Health and Safety	25	04
	Exercises	60	04
Total		160	20
Part-C (Internal)	Continuous and Comprehensive Evaluation (CCE): <i>CBT (Class Based Test), Classroom Participation and Classroom Attendance</i>	15	20
Part - D Practical Work (External)	Practical Examination	02	20
	Written Test	01	10
	Viva Voce	02	10
	Practical File / Student Portfolio	10	10
Total		15	50
Total		300	100

Theory: 60 Marks

“Part – A”

Employability Skills----- (20 Marks)

Unit - 1: Communication Skills and Self-Management Skills-II (10 Marks)

Introduction to Listening, Overcoming barriers to active listening, Basic parts of speech (Noun, Pronoun, Verb, Adverb & Adjective).

Introduction to Self-motivation, Positive attitude, Ways to maintain positive attitude, Intrinsic and extrinsic motivation, Personality, Basic personality traits & overcome personality disorders.

Unit - 2: Basic ICT, Entrepreneurship & Green Skills-II (10 Marks)

Introduction to spreadsheet & its types, Components of spreadsheet. Presentation software, Steps to Save, Open, Close, & Print the presentation.

Introduction to Entrepreneurship, Qualities of a successful entrepreneur, Types of Entrepreneurs, Barriers to entrepreneurship & Startups.

Introduction to Green jobs & its importance, Green jobs in different sectors (Agriculture, Transportation, Water conservation, Solar & Wind energy, Eco-Tourism, Building & Construction, Solid waste management).

“Part – B”

Vocational Skills----- (40 Marks)

Unit 3: Diet (12 Marks)

I. Describe meaning types of diet:

1. Meaning of Diet, Balance Diet.
2. Types of Nutrients (Micro and Macro Nutrients)
3. Types of Diet.

II. Demonstrate the importance of planning diet for a client.

1. Planning and its importance
2. Purpose/Benefits of diet
3. Importance of pre and post workout diets.

Unit 4: Kinesiology and Physiology (12 Marks)

1. Anatomical position
2. Fundamental Position
3. Anatomical movement descriptors. Muscular System and Skeletal System.
4. Energy System.
5. Cardio-vascular system; Function of heart, Function of lungs.

Unit 5: Health and Safety (08 Marks)

6. Meaning of Health and Health Education
7. Health Hygiene and its Importance.
8. Safety Measures and its preventions.
9. First aid and medical Aid. (Measures)

Unit 4: Exercises:**(08 Marks)**

1. Meaning of Exercise
2. Types of Exercises
3. Importance of Exercises on human body
4. Warm-up (general and specific warm-up)
5. Cooling down and its methods.

Develop Strength and Endurance;

1. Strength - types of strength, training methods of developing strength,
2. Endurance, types of endurance, training methods of developing endurance.

Practical (External):50 Marks**A. Hand 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**

10. Automotive

Job Role: Automotive Service Technician L-4

Level-4(12th)

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 12th is as follows:

Class 12 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 Skills and Self-Management Skills-II	50	5
	Basic ICT, Entrepreneurship & Green Skills-II	60	5
Total		110	10
Part –B Vocational Skills	Service Manual	15	2
	Serviceability, Replacement Or Repair Of Engine Components	30	4
	Transmission System	45	5
	Suspension System	30	4
	Autoelectrical System	40	5
Total		160	20
Part-C (Internal)	Continuous and Comprehensive Evaluation (CCE): <i>CBT (Class Based Test), Classroom Participation and Classroom Attendance</i>	15	20
Part - D Practical Work (External)	Practical Examination	02	20
	Written Test	01	10
	Viva Voce	02	10
	Practical File / Student Portfolio	10	10
Total		15	50
Total		300	100

Theory: 60 Marks

“Part – A”

Employability Skills----- (20 Marks)

Unit - 1: Communication Skills and Self-Management Skills-II (10 Marks)

Introduction to Listening, Overcoming barriers to active listening, Basic parts of speech (Noun, Pronoun, Verb, Adverb & Adjective).

Introduction to Self-motivation, Positive attitude, Ways to maintain positive attitude, Intrinsic and extrinsic motivation, Personality, Basic personality traits & overcome personality disorders.

Unit - 2: Basic ICT, Entrepreneurship & Green Skills-II (10 Marks)

Introduction to spreadsheet & its types, Components of spreadsheet. Presentation software, Steps to Save, Open, Close, & Print the presentation.

Introduction to Entrepreneurship, Qualities of a successful entrepreneur, Types of Entrepreneurs, Barriers to entrepreneurship & Startups.

Introduction to Green jobs & its importance, Green jobs in different sectors (Agriculture, Transportation, Water conservation, Solar & Wind energy, Eco-Tourism, Building & Construction, Solid waste management).

“Part – B”

Vocational Skills----- (40 Marks)

Unit – III: Service Manual (04 Marks)

Service Manual : Use of Service Manual, Areas covered under service manual, contents of manual.

Unit – IV: Serviceability, Replacement Or Repair Of Engine Components (08 Marks)

Engine Cylinder: Servicing Of Cylinder Head and cylinder (materials needed).

Servicing of cylinder liner: Replacement of dry liner/bore sleeve, Replacement of wet liner/bore sleeve.

Servicing Of Piston Rings: Definition of piston rings, importance of replacement of rings, procedure for servicing.

Servicing Of Connecting Rod: Steps involved in connecting rod reconditioning.

MPFI : Advantages and uses.

Unit – V : Transmission System (10 Marks)

Clutch Adjustment and Clutch Overhauling : Steps involved in removing clutch assembly from the engine, Inspection of clutch plate for oil leakage.

Propeller shaft: Importance of Propeller Shaft.

Universal Joints: Importance Of Universal Joints.

Slip Joints: Importance Of Slip Joints.

Differential unit : Importance of Differential unit, Jobs performed by differential.

Unit – VI: Suspension System

(08 Marks)

Cambering of leaf spring: Definition and cambering of leaf spring.

Suspension system: Air Suspension System.

Steering system: Manual Steering System, Power Steering System, Rack and pinion type steering gear box and its servicing.

Steering system adjustments: Wheel balancing and alignment.

Unit – VII : Auto Electrical System

(10 Marks)

Electrical symbols: Use Of Electrical Symbol And Circuit Diagram .

Multi meter and its uses: Digital multimeter, test procedures with the help of multimeter(Ammeter, Voltmeter, ohmmeter).

Battery and its Maintenance : General precautions while handling battery.

Battery testing : Battery terminal test, leakage test.

Electrical Connections: Lights and their uses.

HVAC: Heating, Ventilation and Air Conditioning System in an Automobile.

Practical (External):50 Marks

A. Hand on skill

(30 Marks)

1. Reading and understanding of service manual.
2. Inspecting and replace piston ring.
3. Inspecting the piston clearance in cylinder bore.
4. Inspect and replacement of connecting rod.
5. Adjustment in Clutch and overhauling practices.
6. Identify and understand automatic transmission system used in power transmission.
7. Practice of reading electrical symbol and circuit diagram Regular maintenance of the battery.
8. Load testing of battery using load tester.
9. Various tests performed by using multimeter.
10. Identify the components of HVAC system.

B. Viva Voce

(10 Marks)

C. Student Portfolio / Practical Notebook

(10 Marks)

11. Apparel Made-Ups & Home Furnishing

Job Role: Specialized Sewing Machine Operator

Level- 4(12th)

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 12th is as follows:

Class 12 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-II	50	05
	Basic ICT, Entrepreneurship & Green Skills-II	60	05
Total		110	10
Part – B Vocational Skills	Introduction to Garment Pre Production Processes	35	06
	Feed Off Arm and Bar Tack Machines	30	02
	Flat Lock Machine, Blind Stitch Machine, Finishing Machines and Other Equipment's	30	02
	Organization Health, Safety and Security at Workplace	30	04
	Quality Control in Stitching Process	35	06
Total		160	20
Part-C (Internal)	Continuous and Comprehensive Evaluation (CCE): <i>CBT (Class Based Test), Classroom Participation and Classroom Attendance</i>	15	20
Part - D Practical Work (External)	Practical Examination	02	20
	Written Test	01	10
	Viva Voce	02	10
	Practical File / Student Portfolio	10	10
Total		15	50
Total		300	100

Theory: 60 Marks

“Part – A”

Employability Skills----- (20 Marks)

Unit - 1: Communication Skills and Self-Management Skills-II (10 Marks)

Introduction to Listening, Overcoming barriers to active listening, Basic parts of speech (Noun, Pronoun, Verb, Adverb & Adjective).

Introduction to Self-motivation, Positive attitude, Ways to maintain positive attitude, Intrinsic and extrinsic motivation, Personality, Basic personality traits & overcome personality disorders.

Unit - 2: Basic ICT, Entrepreneurship & Green Skills-II (10 Marks)

Introduction to spreadsheet & its types, Components of spreadsheet. Presentation software, Steps to Save, Open, Close, & Print the presentation.

Introduction to Entrepreneurship, Qualities of a successful entrepreneur, Types of Entrepreneurs, Barriers to entrepreneurship & Startups.

Introduction to Green jobs & its importance, Green jobs in different sectors (Agriculture, Transportation, Water conservation, Solar & Wind energy, Eco-Tourism, Building & Construction, Solid waste management).

“Part – B”

Vocational Skills----- (40 Marks)

Unit – III Introduction to Garment Pre-Production Processes (12 Marks)

Explain the meaning and importance of specification sheet. Introduction and contents of a specification sheet: fabric type, Meaning and importance of pre-production operations. Garment specifications, approval of colour and shades, care label and other label approval, and making preproduction instructions for a specialized sewing machine operator. Use of various attachments like:

- I. Gathering foot $\frac{1}{4}$ "
- II. Seam foot
- III. Darning foot
- IV. Binder foot 3-way
- V. Cording foot pin
- VI. Tucking foot
- VII. Ribbon/sequin foot
- VIII. Piping foot
- IX. Ruffle foot

Unit – IV Feed Off Arm and Bar Tack Machines (04 Marks)

Importance of feed off arm machine. Different parts of feed off arm machine. Operating steps of feed off arm machine Importance of bar-tack sewing machine. Different parts of bar-tack sewing machine. Operating steps of bar tack sewing machine.

Unit – V Flat Lock Machine, Blind Stitch Machine, Finishing Machines and Other Equipment's (04 Marks)

Operating procedure and use of Flat lock stitch machine Operating procedure and use of blind stitch machine Describe types of finishing machines: a. Welting b. fusing . Parts of welt attaching machine Operating procedure and uses of finishing machines Operating steps or methods of finishing Types of pressing equipment and machines

Unit – VI Organization Health, Safety and Security at Workplace (08 Marks)

Health and safety related practices applicable at workplace Organizational procedures for safe handling of equipment and machine operations Potential risk due to own actions and methods Reporting protocol and documentation required Details of personal training on first aid, fire fitting and emergencies Explain steps of Storing materials and equipment in Productive equipment and methods used Proper disposal system for line waste and by-products Importance of sound health, hygiene, and good habits Effect of alcohol, tobacco and drugs Meaning of signage related to health safety.

Unit – VII Quality Control in Stitching Process (12 Marks)

Importance of quality in stitching process Types of problem and factors which affecting quality of stitching Types of faults & corrections required in stitching process Steps of finding the faults and correct them Test, sort, track feed and examine the work progress Consequences of incorrect setting in specialized sewing machine Importance of making and segregating rejects. Finding faults and components like creased, stain and damages.

Practical (External):50 Marks

A. Hand on Skill (30 Marks)

1. Prepare different types of specification sheet like fabric type,
2. Make a chart of preproduction operations in the apparel industry and list out their utilities
3. Prepare samples through flat lock stitch machine and paste in practical file
4. Prepare samples by using blind stitch machine and paste in practical file.
5. Prepare samples by using finishing machines and paste in practical file.
6. Practice the effective use of health and safety related instructions at workplace.
7. Practice proper handling and storage of hazardous substance at workplace.
8. Check sequence of setting in specialized sewing machine.
9. Collect pictures of some common faults occurring while quality check and paste in practical file.

B. Viva Voce (10 Marks)

C. Student Portfolio / Practical Notebook (10 Marks)

12.ELECTRONICS AND HARDWARE

Job Role: Field Technician- Air Conditioner

Level-4(12th)

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 12th is as follows:

Class 12 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-II	50	05
	Basic ICT, Entrepreneurship & Green Skills-II	60	05
Total		110	10
Part – B Vocational Skills	Repair And Maintenance Of Air Conditioner	60	06
	Advanced Technologies In Air Conditioning	25	06
	Troubleshooting IoT Applications In Air Conditioner	55	05
	Workplace Safety Measures	20	03
Total		160	20
Part-C (Internal)	Continuous and Comprehensive Evaluation (CCE): <i>CBT (Class Based Test), Classroom Participation and Classroom Attendance</i>	15	20
Part - D Practical Work (External)	Practical Examination	02	20
	Written Test	01	10
	Viva Voce	02	10
	Practical File / Student Portfolio	10	10
Total		15	50
Total		300	100

Theory: 60 Marks

“Part – A”

Employability Skills------(20 Marks)

Unit – I Communication Skills and Self-Management Skills-II (10 Marks)

Active Listening, Importance of active listening at workplace, Steps to active listening. Writing skills of- Sentence, Phrase, Kinds of Sentences, Parts of Sentence, Parts of Speech, Articles, Construction of a Paragraph.

Self Motivation, Finding sources of motivation and inspiration (music, books, activities), Personality traits, types and disorders, Common personality disorders- paranoid, antisocial, schizoid, borderline, narcissistic, avoidant, dependent and obsessive.

Unit – II Basic ICT, Entrepreneurship & Green Skills-II (10 Marks)

Introduction to spreadsheet & its types, Components of spreadsheet, Password Protection. Presentation software, Steps to Save, Open, Close, & Print the presentation.

Barriers to becoming entrepreneur., Behavioral and Entrepreneurial competencies.

Introduction to Green jobs & its importance, Green jobs in different sectors (Agriculture, Transportation, Water conservation, Solar & Wind energy, Eco-Tourism, Building & Construction, Solid waste management).

“Part – B”

Vocational Skills------(40 Marks)

Unit – III Repair and Maintenance of Air Conditioner (12 Marks)

Preventive maintenance of AC – filter, power chords, indoor unit, outdoor unit, switches, Fault finding using customer interaction, initial inspection, symptom, history of problem, age of appliance, status of upkeep, Process for checking the electronic components of AC like compressor, capacitor, fan motor, blower motor, PCB or control panel, Testing equipment – clamp meter, pressure gauge, Tools for repair and servicing -Wiring accessories, Tube cutter, Tube binder, Flaring tool, Brazing torch, Vacuum pump Weight scale, Gas cylinder, Temperature meter, Some common problems, their possible causes and remedy of AC such as – unit not working, fuse off, low cooling, fan not working, fan working but not cooling, continuous switching on and off of the unit. Repairing of remote – sensor problem, push button pad problem, Procedure for repairing of different components such as fan, PCB, air sensor, grill sensor, brazing in case gas leak, Checking the functionality of repair components, Customer feedback, Invoicing and billing.

Unit – IV Advanced Technologies In Air Conditioning (12 Marks)

Internet technology, Internet of things (IoT) technology, App controlled of AC using smart phone, Use of micro controller and Sensors, Fuzzy logic technology, Dual inverter technology, Concept of air curtain

fan, Concept of smart cooling, Slim size air conditioners, Four dimensional air flow with wider angle, Concept of acoustic jacket, Auto clean technology, Anti corrosive technology, Blue fin technology, Protection from voltage fluctuations, Protection from protect leakage, Protection from fire, Fast cooling technology, Efficient cooling technology.

Unit – V Troubleshooting IoT Applications In Air Conditioner (10 Marks)

Common problem in IoT application, List of error codes of related issues, Software issues – Internet connection, wi-fi, Bluetooth version compatibility, Troubleshooting software issues, Steps to resolve software issues, Software setting – Update, software and network setting, Hardware issues - IoT circuit board, sensor, power connection, network cables, Steps for troubleshooting hardware issues, Steps to replace the faulty sensor and circuit board, Mobile app for checking the functionality, Various functions in mobile app, Troubleshooting through mobile app.

Unit – VI Workplace Safety Measures (06 Marks)

Refrigerant cylinder – Handling and storage, Precautions in safe handling, Effect of moisture, Use of recovery unit, Prevention of HFC become flammable, Vacuum pump and Leak Detector, Micron gauge, Manifold gauge in charging hoses, Safety by using power tool.

Practical (External):50 Marks

A. Hand on Skill (30 Marks)

1. Preparing posters of steps for active listening.
2. Create a new worksheet and perform the functions: resizing fonts and styles, copy and move the cell data, sorting and filtering the data and applying elementary formulas.
3. Create a new presentation and perform the functions: Adding slides, Deleting slides, formatting text, inserting clip art and images, saving and printing a ppt.
4. Prepare posters on green skills.
5. Identify and list the common problems, their possible causes and remedy of AC.
6. Repairing of remote.
7. Establish the device connectivity to the wireless network using Internet technology.
8. Demonstrate the different functionalities of App.
9. Demonstrate the use of micro controller and sensors.
10. Demonstrate the troubleshooting of the product through mobile app.
11. Prepare a chart of error codes their cause and remedies.
12. Identify and list the different cables and connectors use in the network connectivity.
13. Identify and replace the faulty sensor and circuit board.
14. Demonstrate the air conditioner control using mobile app.
15. Demonstrate the safe handling of refrigerant cylinder and list precautions while handling.

B. Viva Voce (10 Marks)

C. Student Portfolio / Practical Notebook (10 Marks)

13. Plumbing

Job Role: Plumbing

Level-4(12th)

SCHEME OF ASSEMENT

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

The unit-wise distribution of hours and marks for Class 12th is as follows:

Class 12th			
Module Part and Name	Unit Name	No. of Hours for Theory and Practical (200)	Max. Marks Theory and Practical (100)
Part - A Employability Skills	Communication & Self-Management Skills-II	60	5
	Basic ICT, Entrepreneurship & Green Skills-II	50	5
Total		110	10
Part – B Vocational Skills	Installation and Repair of Advanced Sanitary Fixtures	40	5
	Functioning and Maintenance of Taps, Valves, Faucets and Control Devices	40	4
	Techniques Related to Cutting, Bending and Joining of Fixtures & Fittings	50	5
	Defects in Plumbing System	20	3
	Working and Operation of Special tools	10	3
Total		160	20
Part-C (Internal)	Continuous and Comprehensive Evaluation (CCE): <i>CBT (Class Based Test), Classroom Participation and Classroom Attendance</i>	15	20
Part - D Practical Work (External)	Practical Examination	02	20
	Written Test	01	10
	Viva Voce	02	10
	Practical File / Student Portfolio	10	10
Total		15	50
Total		300	100

Theory: 60 Marks

“Part – A”

Employability Skills------(20 Marks)

Unit – I Communication Skills and Self-Management Skills-II (10 Marks)

Active Listening, Importance of active listening at workplace, Steps to active listening. Writing skills of- Sentence, Phrase, Kinds of Sentences, Parts of Sentence, Parts of Speech, Articles, Construction of a Paragraph.

Self-Motivation, Finding sources of motivation and inspiration (music, books, activities), Personality traits, types and disorders, Common personality disorders- paranoid, antisocial, schizoid, borderline, narcissistic, avoidant, dependent and obsessive.

Unit – II Basic ICT, Entrepreneurship & Green Skills-II (10 Marks)

Introduction to spreadsheet & its types, Components of spreadsheet, Password Protection. Presentation software, Steps to Save, Open, Close, & Print the presentation.

Barriers to becoming entrepreneur., Behavioral and Entrepreneurial competencies.

Introduction to Green jobs & its importance, Green jobs in different sectors (Agriculture, Transportation, Water conservation, Solar & Wind energy, Eco-Tourism, Building & Construction, Solid waste management).

“Part – B”

Vocational Skills------(40 Marks)

UNIT-I: Installation and repair of advanced sanitary fixtures (10 Marks)

Introduction to advanced sanitary fixtures: Advanced plumbing fittings and fixtures, advantages and uses

Installation of advanced sanitary fixtures: Reading of instruction manual of advanced sanitary fixtures, Installation method, Precaution during installation, Understand the functioning of taps and valves

Repair of advanced sanitary fixtures: identify the faults, Suggest the method of repairing of faults.

UNIT-II: Functioning and maintenance of taps, valves and control devices (08 Marks)

Explaining the function of taps and valves: Taps and valves and its role, Material of construction, Parts of taps and valves, importance and types of taps and valves.

Identify type and components of control devices: Control devices and its use, Type and components of control devices of plumbing and sanitary fixtures, Functioning of control devices, Method of use of control device.

**UNIT-III: Techniques related to cutting, bending and joining of fixtures & fittings
(10 Marks)**

Identify different components of a building structure: Components of Building structure, Importance and use of building components in a structure, Purpose and utilization of various components of building structure.

Cutting and opening in a building structure: Method of cutting, Tools used for cutting, Safety during cutting and opening.

Bending and joining of plumbing fittings in a building structure: Method of bending and joining of plumbing fittings, Precautions during process of bending and joining.

UNIT-IV: Defects in plumbing system: (06 Marks)

Identify different types of defects: Importance and use of checking the defects, Annual maintenance.

Repairing of different types of defects: Type of Defects like leakage, low pressure, no supply of water etc., Importance of maintenance, Precautions during maintenance

UNIT-V: Working and operation of special tools: (06 Marks)

Identification of special tools: Importance and use of special tools, power and hand tools.

Handling of special tools: Handling of special tools, Precautions to be made during handling of special tools

Practical (External):50 Marks

A. Hand on Skill (30 Marks)

1. Identification of advanced plumbing fitting and fixtures.
2. Identify name and draw different types of valves.
3. Identification of parts of taps and valves.
4. Draw and identify different component of building.
5. Do the bending with proper angle and joining of pipe as per requirement.
6. Identify the components of special tools.
7. Do the repair and replacement of defective parts.
8. Identify the components of special tools.
9. Do the repair and replacement of defective parts.

B. Viva Voce (10 Marks)

C. Student Portfolio/Practical Notebook (10 Marks)