

**Syllabi & Courses of Study
Of
Vocational Subjects
For
Class12th (Level-4)**



Published By:

**THE JAMMU & KASHMIR BOARD OF SCHOOL EDUCATION
Kashmir/Jammu**

Session: 2023-24

CONTENTS

Trades	Description	Subject Code	Examination Code	Page No.
	Scheme of Examination (Common for All Trades)	X	X	04
	Practical Assessment (Common for All Trades)	X	X	05
	Question Distribution (Common for All Trades)	X	X	06
1	IT/ITeS Job Role: Junior Software Developer	050	ITE	07-10
2	Retail Job Role: Trainee Associate	051	RET	11-14
3	Healthcare Job Role: General Duty Assistant	052	HTC	15-18
4	Tourism And Hospitality Job Role: Customer Service Executive (Meet & Greet)	053	TOU	19-22
	Tourism And Hospitality Job Role: Food & Beverage Service Steward	053	TOU	23-25
5	Security Job Role: CCTV Video Footage Auditor	054	SEC	26-29
6	Agriculture Job Role: Dairy Farmer/Entrepreneur	055	AGR	30-33
	Agriculture Job Role: Organic Grower	055	AGR	34-36
7	Telecommunication Job Role: Optical Fibre Technician	056	TLC	37-40
8	Media and Entertainment Job Role: Texturing Artist	057	MDE	41-43
9	Beauty and Wellness Job Role: Beauty Therapist	058	BTW	44-46

10	Physical Education and Sports Job Role: Fitness Trainer	059	PES	47-49
11	Automotive Job Role: Automotive Service TechnicianL-4	060	ATM	50-52
12	Apparels Make-ups & Home Furnishing Job Role: Specialized Sewing Machine Operator	061	AMH	53-56
13	Electronics and Hardware Job Role: Field Technician Air conditioner	062	ELH	57-60
14	Plumbing Job Role: Plumber(General)	063	PLM	61-64

JKBOSE

SCHEME OF EXAMINATION

Details of Assessment Plan

1. There will be three 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	Sector Skill Council (SSC)/ JKBOSE
TOTAL		100 Marks		

PRACTICALASSESSMENT

EXTERNALASSESSMENT:

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

Question Distribution

Max.Marks:50

Duration:02:30Hrs

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-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-II	50	05
	Basic ICT, Entrepreneurship & Green Skills-II	60	05
Total		110	10
Part – B Vocational Skills	Relational Database Management System -MySQL	45	12
	Python Programming-II	35	04
	Software Engineering	45	12
	Emerging Trends and Social Impact	40	12
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

“Part–A”

Employability Skills----- (10 Marks)

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

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 Relational Database Management System-MySQL (12 Marks)

Concepts of Database: Introduction to file system, Limitations of file system, Data base management system: Introduction to DBMS, Advantages of DBMS, Relational data model, Concept of: attribute, tuple, domain, degree, cardinality and schema.

Key Concepts: Candidate key, Primary key, Alternate key and Foreign key.

Structured Query Language: Introduction to structured query language (SQL), Data definition language, Data manipulation language, Data types, Constraints.

Create and Process Table: Data definition: CREATE database/table, ALTER table, Describe table, DROP database/table. Data manipulation: INSERTION of records, Data query: SELECT statement, Data updation and deletion, Aggregate functions.

Unit–IV Python Programming-II (04Marks)

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–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–VII Emerging Trends and Social Impact

(12Marks)

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 cyber crime, Types of cyber crime, Combatting and preventing cyber crime, Indian Information Technology Act (IT Act), Intellectual property right (IPR)-Copy right, Patent, Trade mark, Positive and Negative effects of technology on health.

Practical(External)50Marks

A. Hand on Skill

(15 Marks)

1. Create a student table (roll no, name, fathers name, mothers name, class, residence, phone no.) in MySQL with student roll no. as primary key.
2. Add new column (adhaar no.) to student table.
3. Fetch (name, class, residence, phone no.) from student table using select statement
4. Write a program in python to generate prime series.
5. Write a program in python to calculate the sum of digits of number.
6. Write a program in python to print all natural no.'s from 1 to 100.
7. Write a program in python to print multiplication table of any number..

B. Written Test

(15 Marks)

C. Viva Voce

(10 Marks)

D. Student Portfolio/Practical Notebook

(10 Marks)

2.Retail Management

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 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	5
	Basic ICT, Entrepreneurship & Green Skills-I	65	5
Total		110	10
Part – B Vocational Skills	Monitoring and Maintaining Store Security	40	8
	Loyalty Schemes for customers and Process of Credit Application	45	14
	Customer Information System and Customer Retention	40	8
	Work in Team and Organization	40	10
Total		165	40
Part – C Practical Work	Practical Examination	6	15
	Written Test	1	10
	Viva Voce	3	10
Total		10	35
Part-D Internal	Practical File/ Student Portfolio	10	10
	Viva Voce	05	5
Total		15	15
Total		300	100

“Part–A”

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

Unit–I Communication Skills and Self-Management Skills-II (05 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 (05 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 (08 Marks)

Meaning and types of Risks in Retail, Factors of identifying the Risk, Company procedures for reporting security risk – Various issues on which reporting is necessary, What to do if associates catches someone, Reporting on security breaches, reporting through equipments, reporting to a robbery. Cyber Security and its challenges, Loss prevention-its elements and issues, Goals of Audit and process of Audit, Factors to keep in mind while evaluating the security of store.

Unit–IV Loyalty Schemes for Customers and Process of Credit Application (14 Marks)

Meaning of loyalty schemes and loyal customers, Goals, types, features and benefits of loyalty schemes, sources of information for loyalty schemes, Membership of loyalty schemes-Ask customer about the membership of loyalty schemes, respond positively to the customer, help customer in decision making ,provide relevant information, build and promote goodwill. Steps followed during a membership drive – pre-membership stage, membership stage and post membership stage.CRM its objectives, benefits. Concepts of E-CRM, Difference between CRM and E-CRM.

Introduction: Meaning, features and need of credit sales, Terms and conditions used for sale of goods on credit basis, Credit check, meaning and need for credit check. Steps to be followed before granting customer credit, Meaning of credit requisition and credit worthiness, Techniques used to determine credit worthiness of credit.

Unit–V Customer Information system and Customer Retention

(08 Marks)

Meaning, Concept and importance of Customer information and customer retention, Retailers policy for providing information and advice to customers, Meaning of Customer Complaint and steps involved in sorting out complaints, Rights of customer and retailers regarding the complaints, Duties of Retailers regarding the complaints. Concept and significance of customer needs, Guidelines for recognizing customer needs, Meaning and importance of Customer Retention, Strategies and Process of customer retention..

Unit–VII Work in team and Organization

(10 Marks)

Meaning of team work and features of an effective team, Importance of team work, Dealing with customers effectively, Roles and Responsibilities of team members, Interpret, confirm and action legal requirements like (Anti-discrimination, Sexual harassment, Bullying).Development of effective work habits, Define Goal and its features, Skills required for completing goals, Career prospects in retailing.

Practical(External)50Marks

A. Hand on Skill

(30 Marks)

Unit I

- 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 II

- 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 III

- 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 IV

- 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 V

- 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 VI

- 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 pick up the damaged goods from given goods.

Unit VII

- 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 (052)

Job Role: General Duty Assistant Trainee

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 12th			
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	5
	Basic ICT, Entrepreneurship & Green Skills-I	65	5
Total		110	10
Part – B Vocational Skills	Hospital management system	25	6
	Sterilization and Disinfection	30	8
	Introduction to Medication	25	5
	Immunization	25	6
	Physiotherapy	20	5
	Bio-Medical Waste Management	20	5
	Medical Records	20	5
Total		165	40
Part – C Practical Work	Practical Examination	6	15
	Written Test	1	10
	Viva Voce	3	10
Total		10	35
Part-D Project work/Field visit	Practical File/Student Portfolio	10	10
	Viva Voce	5	5
Total		15	15
Total		300	100

“Part–A”

Employability Skills----- (10 Marks)

Unit–I Communication Skills and Self-Management Skills-II (05 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 (05 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 system (06 Marks)

Describe the role of GDA in admission of patient in hospital, assess the health of the patient, demonstrate the knowledge of significance, purpose and techniques of the physical assessment of the patient, Provide assistance in various examinations of the patient. Provide assistance in various examinations of the patient viz. eyes, ears, nose, throat, neck, chest, etc., Collect the specimen of urine, stool, sputum, blood, etc. using different methods. Use various equipment and supplies in furnishing the patient’s unit. Demonstrate the knowledge of process of disinfection. Demonstrate the knowledge of care of articles in a hospital

Unit–IV Sterilization and Disinfection (08 Marks)

Demonstrate the knowledge of process of disinfection. Demonstrate the knowledge of care of articles in a hospital. Provide assistance in disinfection of wards in a hospital. Demonstrate the knowledge of general surgical asepsis practices. Demonstrate the knowledge of disinfection of operation theatre. Demonstrate the knowledge of surgical dressing. Describe the diseases caused by microorganism. Demonstrate the knowledge of common human diseases and their causal agents. Demonstrate the knowledge of Hospital Acquired Infections. Perform disinfection of wards and equipment.

Unit–V Introduction to Medication.**(05 Marks)**

Demonstrate the knowledge of different types of drug delivery system operated in the hospital. Maintain patient's safety and effectiveness in drug delivery. Administer the drug in the patient's body through correct route. Demonstrate the knowledge of various drug dosage forms. Demonstrate the knowledge of Novel Drug Delivery System. Demonstrate the knowledge of controlled drug delivery system. Demonstrate the knowledge of basic principles of drug administration. Demonstrate the knowledge of forms and routes of medication. Classify the drugs. Demonstrate the knowledge of drugs of cardiovascular system. Demonstrate the knowledge of storage and administration of medicine.

Unit–VI Immunization**(06 Marks)**

Differentiate between various types of immunity, Prepare immunization schedule chart, Identify the key components of Universal Immunization Programme (UIP), Identify the key components of pulse immunization Programme.

Unit–VII. Physiotherapy**(05 Marks)**

Demonstrate the knowledge of basic principles of physiotherapy, Demonstrate the knowledge of principles and techniques of good body mechanics, Demonstrate the knowledge of exercise, Demonstrate the knowledge of active range of motion exercise, Demonstrate the knowledge of Passive Range of Motion exercise, Demonstrate the knowledge of breathing and coughing exercises.

Unit–VIII. Biomedical waste management**(05 Marks)**

Demonstrate the knowledge of bio- medical waste management, Demonstrate the knowledge of the sources and disposal methods of bio-medical waste, Demonstrate the knowledge of segregation, packaging, transportation and storage of bio-medical waste, Identify the role of personnel involved in waste management.

Unit–IX Medical Records**(05 Marks)**

Prepare complete medical record, identify the principles of documentation, Demonstrate the knowledge of content of medical documentation, Identify the role of GDA in maintaining record.

Practical(External)50Marks

A. Hand on Skill.

(15 Marks)

1. Perform physical examination of the patient.
2. Performing medical examination of the patient
3. Demonstrate the Various positions of the patients
4. Demonstrate different techniques of physical examination.
5. Demonstration of different equipment/instruments used in collecting specimen of the patient
6. Demonstration of instruments used in a hospital.
7. Demonstrate the steps of wearing, hand washing, gown, face mask and hand gloves
8. Demonstrate the types and general rules of application of surgical dressing.
9. Different routes of administering the drugs in the patient's body.
10. Techniques of active ROM exercises
11. Deep breathing and coughing exercises.
12. Perform pursed lip breathing, diaphragmatic breathing, abdominal breathing and belly breathing exercise.
13. Disposal techniques of different bio-medical waste.

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-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 kills-II	50	05
	Basic ICT, Entrepreneurship & Green Skills-II	60	05
Total		110	10
Part – B Vocational Skills	Etiquette & Hospitable conduct	30	08
	Gender & Age Sensitive service practices	25	06
	Health & Hygiene	30	06
	Safety at Work Place	33	08
	Learn a foreign or local language	22	05
	Customer Centric Service	25	07
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

“Part–A”

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

Unit–I Communication Skills and Self-Management Skills-II (05 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 (05 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 (08 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 Customers satisfaction. Customer Contribution to the Brand Value.

Unit–IV Gender and Age Sensitive Service Practices (06 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. Behavioral etiquettes while dealing with female colleagues and guests.

Unit– V Health and Hygiene (06 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 are a and display safety signs where necessary.

Unit–VII Learn a foreign or local language(s) including English

(05 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.

Unit–VIII Customer-Centric Services

(07 Marks)

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 behavior, 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 fulfillments. 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):50Marks

A. Hand on Skill

(30 Marks)

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

B. Viva Voce

(10 Marks)

C. Student Portfolio/Practical Notebook

(10 Marks)

JKBOSE

4.Tourism & Hospitality

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

Class 12 th			
Module Part and Name	Unit Name	No. of Hours for Theory and Practical (305)	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	45	06
	Work effectively with others	35	04
	Maintenance of safe secure and hygienic environment	45	06
	Total		165
Part – C Practical Work	Practical Examination	06	20
	Written Test	01	10
	Viva Voce	03	10
Total		10	40
Part- D (Internal)	Practical File/Student Portfolio	10	10
	Viva Voce	05	10
Total		15	20
Part-E	Continuous and Comprehensive Evaluation (CCE)	0	10
Total		300	100

“Part–A”

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

Unit–I Communication Skills and Self-Management Skills-II (05 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 (05 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 Resolving Customer Service Issues. (08 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-IV 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-V Work effectively with others.

(08 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-VI Maintenance of Safe Secure and Hygienic Environment.

(08 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)50Marks

A. Hand on Skills

(30 Marks)

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

B. Viva Voce

(10 Marks)

C. Student Portfolio

(10 Marks)

5.Security-(054)

Job Role :CCTV Video Footage Auditor:

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 Class12th is as follows:

Class 12th			
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	Unit 1:Tagging of Audit Findings and Maintaining a Library	40	10
	Unit 2Security Incident Reporting And Documentation	35	09
	Unit 3: Backing Up Of CCTV Video Footage	25	12
	Unit 4: Occupational Health And Safety	65	09
Total		165	40
Part - C Practical Work	Practical Examination	6	15
	Written Test	1	10
	Viva Voce	3	10
Total		10	35
Part-D (Internal)	Practical File / Student Portfolio	10	10
	Viva Voce	5	05
Total		15	15
Total		300	100

“Part–A”

Employability Skills ----- (10 Marks)

Unit–I Communication Skills and Self-Management Skills-II (05 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 (05 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 Tagging of Audit Findings and Maintaining a Library (10 Marks)

1. Importance of tagging audit findings/incidents
2. Tagging the exception anomaly
3. Adding a tag to single or multiple cameras

Demonstrate the knowledge of maintaining a library

1. Maintenance of institutional library of audit findings /incidents that have been tagged
2. Trends and patterns of the tagged audit findings

Unit–IV Security Incident Reporting And Documentation (09 Marks)

1. Introduction to CCTV footage recording and reporting
2. The 5 Ws and 1H (what, when, where, why, who and how) that are essential for information gathering
3. Reporting unusual occurrences/ abnormalities detected, at predefined intervals in a standardized manner on a daily basis

Demonstrate the knowledge of documentation and reporting

1. Interpretation of the 'patterns' based on historical data gathered through systematic audit/incident reports.
2. Recording and reporting procedure and formats (as per the respective industry vertical). Reports on the following: Daily Activities, Incidents, Accidents, Maintenance of Equipment, Summary reports, etc.
3. Sources of evidence related to safety/security incidents, importance of preserving the evidence.
4. Relevant signage's and notice

Unit-V Backing Up of CCTV Video Footage

(10 Marks)

1. Introduction to CCTV video footage
2. CCTV video footage backup policies, procedures, and priorities (as per the respective industry vertical to which the establishment belongs)
3. Backing up CCTV video footage at multiple locations for the purpose of recovery (USB Flash drive, cloud, DVR, etc.)

Demonstrate the knowledge of data protection and confidentiality

1. Importance of confidentiality and data protection
2. Compliance with a legal obligation when processing data for a particular purpose is a legal requirement
3. Policies and procedures for deleting video footages when not required or necessary

Unit-VII Occupational Health And Safety

(09 Marks)

1. Introduction to health and hygiene.
2. Issues in health and hygiene.
3. Maintaining the work area in clean and tidy condition.
4. Personal hygiene and grooming

Demonstrate the knowledge of procedures and techniques for preventing injuries and hazards.

1. Rules governing the use of the computer laboratory and electronic devices.
2. Injuries which may arise from the prolonged use of computer systems (repetitive strain injury, carpal tunnel syndrome, computer vision syndrome)
3. Emergencies and hazards at workplace
4. First-aid procedures.
5. Fire safety.

Practical(External) 50Marks

- A. Hand on Skill. (15 Marks)**
1. Auditing CCTV video footage.
 2. Coverage and layout of the premises under surveillance.
 3. Inspection and detection of the anomalies in the video footage.
 4. Process of forensic analysis of the findings.
 5. Tagging the audit findings.
 6. Reporting and documentation process.
 7. Creating a backup of audit findings.
- B. Written Test (10 Marks)**
- C. Viva Voce (15 Marks)**
- D. Student Portfolio/Practical Notebook (10 Marks)**

6.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 12th opting for vocational subject along with general education subjects.

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

Class12th			
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	20	04
	Maintaining healthy performance of livestock	45	12
	Performing hand and machine milking	20	04
	Maintaining health and safety standard at the workplace	30	08
	Entrepreneurship	50	12
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 Work)	Practical File/Student Portfolio	10	10
	Viva Voce	05	05
Total		15	15
Total		300	100

“Part–A”

Employability Skills----- (10 Marks)

Unit–I Communication Skills and Self-Management Skills-II (05 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 (05 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 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 behavior in dairy animals, prevention and control of parasitic infections, endo- parasites, deworming, administering deworming, harmful effects on dairy animals, common ectoparasites, control of ectoparasites, methods to check ectoparasites, precautions during medicine application, management practices for maintaining animal productivity, animal identification methods, when and how to inseminate, direct methods of pregnancy detection, management of calf from birth, colostrums 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 let down, 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 workplace (08 Marks)

Hygiene and bio-security in a dairy farm and disposal of carcass, safe handling of equipment and animals, bio-security, 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, sunstroke, management of wounds, prolapse of uterus,

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)50Marks

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 Haymaking.
3. Visit near by dairy farm and evaluate the health of cows based on the sign you observe on them.
4. Identify ecto-parasites in a near by 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.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 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(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.	85	20
	Standards and Certification in Organic Farming	40	10
	Marketing of Organic Produce	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 work)	Practical File/Student Portfolio	10	10
	Viva Voce	05	05
Total		15	15
Total		300	100

“Part–A”

Employability Skills----- (10 Marks)

Unit–I Communication Skills and Self-Management Skills-II (05 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 (05 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 (pre cooling, 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 product 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)50Marks

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 various crops, and discussion on the post-harvest activities.
5. Visit to aware house/ 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 recordkeeping.
8. Visit to an organic farm for understanding recordkeeping.

B. Viva Voce

(10 Marks)

C. Student Portfolio/Practical Notebook

(10 Marks)

7. 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 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(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	Unit 1: Introduction to Optical Fiber Industry	35	12
	Unit 2: Optical Fiber Cable and Tools	40	12
	Unit 3: Installation of Optical Fiber Cable	45	08
	Unit 4: Fault Restoration, Safety Measures and Networking	45	08
Total		160	40
Part – C Practical Work	Practical Examination	6	15
	Written Test	1	10
	Viva Voce	3	10
Total		10	35
Part-D Field Visit	Practical File/Student Portfolio	10	10
	Viva Voce	10	05
Total		20	15
Total		300	100

“Part–A”

Employability Skills----- (10 Marks)

Unit–I Communication Skills and Self-Management Skills-II (05 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 (05 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 Color 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 toolkit:

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 Analyse 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 figure8'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–VI 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)50Marks

A. Hand on Skill

(15 Marks)

- a. Creating an ew worksheet, Resizing fonts and styles, Copying and move the cell data.
- b. Create a list of students of your school in excel.
- c. Sort and Filter the list of students class wise, gender wise and soon.
- d. Creating an ew presentation on a given topic.
- e. Prepare colorful posters on green jobs.
- f. Draw the route plan and diagram for given site conditions.
- g. Identify and name different types of cables used in transmission media.
- h. Demonstrate the color-codings cheme for individual fibres bundled in a cable.
- i. Identify and name the tools in fibre optics tool kit.
- j. Demonstrate the methods of cable storage and its handling.
- k. Demonstrate to install fibre optic cable in splice tray.
- l. Demonstrate use the personal protective equipment
- m. Demonstrate the working of CCTV camera.

B. Written Test

(10 Marks)

C. Viva Voce

(15 Marks)

D. Student Portfolio/Practical Notebook

(10 Marks)

8. 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 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(300)	Max. Marks Theory and Practical (100)
Part –A Employability Skills	Communication Skills and Self-Management Skills-II	45	5
	Basic ICT, Entrepreneurship & Green Skills-II	65	5
Total		110	10
Part-B Vocational Skills	3D Animation	60	16
	Surface Shading and Maps	60	16
	Rendering, Compositing and File Formats	45	8
Total		165	40
Part –C Practical Work	Practical Examination	6	15
	Written Test	1	10
	Viva Voce	3	10
Total		10	35
Part-D Project work/Field Visit	Practical File/ Student Portfolio	10	10
	Viva Voce	5	5
Total		15	15
Total		300	100

“Part–A”

Employability Skills----- (10 Marks)

Unit–I Communication Skills and Self-Management Skills-II (05 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 (05 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 (16 Marks)

Main menu bar of 3D software (character's and objects that are developed on 3D), Surface types 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 (08 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)50Marks

A. Hand on Skill

(15 Marks)

1. Demonstrate essential skills movie window in Auto desk Maya
2. Draw3Danimation 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 Auto desk 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. Written Test

(10 Marks)

C. Viva Voce

(15 Marks)

D. Student Portfolio/Practical Notebook

(10 Marks)

9. Beauty&Wellness

Job Role: BeautyTherapist

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:

Class12th			
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

“Part–A”

Employability Skills----- (10 Marks)

Unit–I Communication Skills and Self-Management Skills-II (05 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 (05 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 make up 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 booking, 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 hand posture, Professional etiquettes.

Practical(External):50Marks

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 makeup7 Demonstration of bleach preparation and application8:Threadingprocedure
7. Demonstration of Draping Saree or Lehanga10:FacialMassage
8. Demonstration of procedures for maintaining personal hygiene

B) Viva Voce

(10 Marks)

C) Student Portfolio/Practical Notebook

(10 Marks)

10. Physical Education & Sports - (059)

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.

Class 12th			
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	45	05
	Basic ICT, Entrepreneurship & Green Skills-II	65	05
Total		110	10
Part – B Vocational Skills	Unit 1; Diet	40	12
	Unit 2; Kinesiology and Physiology	35	12
	Unit 3; Health and Safety	25	08
	Unit 4; Exercises	65	08
Total		165	40
Part - C Practical Work	Practical Examination	6	15
	Written Test	1	10
	Viva Voce	3	10
Total		10	35
Part-D Project Work/ Field Visit (CCE)	Practical File / Student Portfolio	10	10
	Viva Voce	5	15
Total		15	15
Total		300	100

“Part – A”

Employability Skills----- (10 Marks)

Unit–I Communication Skills and Self-Management Skills-II (05 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 (05 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 Diet (12 Marks)

1. Nutrition, Nutrients and its types, Malnutrition and its types, Remedies for mal nutrition.
2. Diet, Purpose of diet, types of diet, factors affecting diet.
3. Balance diet, benefits of eating a balance diet, Importance of balance diet (For a common man, Student, Sports Person, Physical Education Teacher).
4. Components of balance diet (Carbohydrates, Proteins, Fats, Minerals, Vitamins and Water) and its functions.

Unit-IV Kinesiology and Physiology (12 Marks)

1. Meaning and Concept of Kinesiology, Definitions and Principles, Importance of Kinesiology for games and sports.
2. Motion, Types of motion of a body, Laws of motions, Plane and Axis of human body and its types.
3. Muscular System, Types of Muscles, Functions and Characteristics of Muscles.
4. Skeletal System and its functions, types of joints and their major movements.
5. Cardio-vascular system; Function of heart, Function of lungs.

Unit-V Health and Safety (08 Marks)

1. Meaning of Posture, Types of good posture, Importance of good posture
2. Causes of poor posture, Preventive and Remedial Measures of a Poor posture.
3. Meaning of Massage, Types and benefits of massage.
4. Safety Measures and its preventions.
5. First aid and medical Aid. (Measures)

Unit-VI Exercises: (08 Marks)

1. Meaning of Exercise, Types of Exercises, Benefits of Exercise, Importance of Exercises on human body
2. Warm-up Exercise (General and specific warm-up), Types of Warm Exercises, Guide lines that govern warm up programme.
3. Cooling down and its methods, types of cooling down exercises.

Practical(External):50Marks

A. Hand on Skill

(30 Marks)

1. Physical Fitness Test
2. Skill Test of games and Sports student Choice

(15 Marks)

(15 Marks)

B. Viva Voce

(10 Marks)

C. Student portfolio/practical notebook.

(10 Marks)

JKBOSE

11.Automotive

Job Role:Automotive Service Technician L4

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:

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	4
	Serviceability, Replacement Or Repair Of Engine Components	30	8
	Transmission System	45	10
	Suspension System	30	8
	Auto electrical System	45	10
Total		165	40
Part –C Practical Work	Practical Examination	6	15
	Written Test	1	10
	Viva Voce	3	10
Total		10	35
Part- D Project/ Field Work	Practical File/Student Portfolio	5	10
	Viva Voce	5	5
Total		10	15
Total		300	100

“Part–A”

Employability Skills----- (10 Marks)

Unit–I Communication Skills and Self-Management Skills-II (05 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 (05 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(08Marks)

General engine checkup, Replacement of piston rings, Inspection and replacement of cylinder liner/bore sleeve, Inspection and replacement of connecting rod and its defective components, Regular servicing of MPFI system, CRDI system.

Unit–V:TransmissionSystem (10 Marks)

Introduction to transmission system, overhauling of clutch, Servicing of differential unit and adjustment, Servicing of Propeller shaft, functions of Universal and slip joint.

Unit–VI Suspension System (08 Marks)

Introduction to suspension system, Leaf spring and shock absorber, Manual and power steering system.

Unit–VII Auto Electrical System (10 Marks)

Electrical symbols, Use Of Electrical Symbol And Circuit Diagram , Multimeter and its uses: Digital multimeter, test procedures with the help of multimeter (Ammeter, Voltmeter, ohmmeter), General precautions while handling battery, Battery strength test, Gravity testing.

Practical(External)50Marks

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. Written Test

(10 Marks)

Cc. Viva Voce

(10 Marks)

12. Apparel Made-ups and 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 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(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 Garment Pre Production Processes	25	12
	Feed Off Armand Bartack Machines	35	12
	Flat Lock Machine, Blind Stitch Machine, Finishing Machines and Other Equipment	50	4
	Organization Health, Safety and Security at workplace	25	4
	Quality Control in Stitching Process	30	8
Total		165	40
Part – C Practical Work	Practical Examination	6	15
	Written Test	1	10
	Viva Voce	3	10
Total		10	35
Part-D Project Work /Field Visit	Practical File/Student Portfolio	10	10
	Viva Voce	5	05
Total		15	15
Total		300	100

“Part–A”

Employability Skills----- (10 Marks)

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

Meaning and importance of pre-production operations, Garment specifications, approval of color and shades, care label and other label approval, and making preproduction instructions for a specialized sewing machine operator, Use of various attachments like: Gathering foot, 1/4” seam foot, darning foot, binder foot, 3-way cording foot, pin tucking foot, ribbon/sequin foot, piping foot, ruffle foot.

Unit–IV Feed off Arm and Bar Tack Machines (12 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 (04 Marks)

Operating procedure and use of Flat lock stitch machine, Operating procedure and use of blind stitch machine, Describe types of finishing machines: Welting, 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

(04 Marks)

Importance of sound health, hygiene, and good habits, Effect of alcohol, tobacco and drugs, Meaning of signage related to health safety.

Unit–V Quality Control in Stitching Process

(08 Marks)

Importance of quality in stitching process ,Types of problem and factors which affecting quality of stitching, 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.

JKBOSE

Practical(External)50Marks

A. Hand on Skill

(15 Marks)

1. Demonstration and practice of writing sentences and paragraphs on to pics related to the subject
2. Demonstration and practice on the copying and move the cell data
3. Prepare posters on green jobs
4. Prepare different types of specification sheet like fabric type, seams and stitches, colour, accessory details (zippers, pockets, etc.),and ornamentation(embroidery, cutwork, patchwork etc
5. Sewing practice with various attachments of sewing machines and prepare a sample file
6. Sewing practice on bar-tack machine
7. Prepare samples through flat lock stitch machine and paste in practical file
8. Prepare samples by using blind stitch machine and paste in practical file
9. Enlist pressing equipment and machines
10. Demonstrate proper action staking incase of emergencies at workplace
11. Examine and make a report in case of any faults in specialized sewing machine
12. Check sequence of setting in specialized sewing machine

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-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-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	10
	Advanced Technologies In Air Conditioning	25	10
	Trouble shooting IoT Applications In Air Conditioner	55	10
	Workplace Safety Measures	25	10
Total		165	40
Part – C Practical Work	Practical Examination	06	15
	Written Test	01	10
	Viva Voce	08	15
Total		15	40
Part-D	Practical File/Student Portfolio	10	10
Total		10	10
Total		300	100

“Part–A”

Employability Skills----- (10 Marks)

Unit–I Communication Skills and Self-Management Skills-II (05 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 (05 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 Repair and Maintenance of Air Conditioner (10 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 up keep, 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 (10 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 Trouble shooting 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, Trouble shooting through mobile app.

Unit–VI Workplace Safety Measures

(10 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)50Marks

A. Hand on Skill

(15 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 appt.
- 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 trouble shooting 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.
- 16) Demonstrate the safe handling of tools.

B. Written Test

(10 Marks)

C. Viva voce

(15 Marks)

D. Student Portfolio/Practical Notebook

(10 Marks)

14. PLUMBING (063)

Job Role: Plumber General II

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 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	45	5
	Basic ICT, Entrepreneurship & Green Skills	65	5
Total		110	10
Part – B Vocational Skills	Installation & repair of advanced sanitary fixtures	35	9
	Functioning & maintenance of Taps, Valves, Faucets & Control Devices	30	8
	Techniques related to Cutting, Bending & Joining of fixtures & fittings	30	7
	Defects in plumbing systems	40	9
	Working & operation of special tools	30	7
Total		165	40
Part - C Practical Work	Practical Examination	6	15
	Written Test	1	10
	Viva voce	3	10
Total		10	35
Part-D Project / Field work	Practical File / Student Portfolio	10	10
	Viva Voce	5	10
Total		15	15
Total		300	100

Theory (50 Marks)

“Part – A”

Employability Skills----- (10 Marks)

Unit–I Communication Skills and Self-Management Skills-II (05 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 (05 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-I Installation & 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 & maintenance of taps, valves & 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 & 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 Systems (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)