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LEARNING OUTCOME BASED VOCATIONAL CURRICULUM

JOB ROLE:

Domestic IT Helpdesk Attendant

(QUALIFICATION PACK: Ref. Id. SSC/Q0110)

SECTOR: IT/ ITeS

Classes 11 and 12

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Shyamla Hills, Bhopal – 462 002, M.P., India

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Gandhiji's Talisman

I will give you a talisman. Whenever you are in doubt or when the self becomes too much with you, apply the following test:

Recall the face of the poorest and the weakest man whom you may have seen and ask yourself if the step you contemplate is going to be of any use to him. Will he gain anything by it? Will it restore him to a control over his own life and destiny? In other words, will it lead to Swaraj for the hungry and spiritually starving millions?

Then you will find your doubts and your self melting away.

M K Gandhi

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Learning Outcome Based Curriculum

IT/ ITES – Domestic Data Entry Operator

June, 2017

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FOREWORD

The Pandit Sunderlal Sharma Central Institute of Vocational Education (PSSCIVE) a constituent of the National Council of Educational Research and Training (NCERT) is spearheading the efforts of developing learning outcome based curricula and courseware aimed at integrating both vocational and general qualifications to open pathways of career progression for students. It is a part of Centrally Sponsored Scheme of Vocationalisation of Secondary and Higher Secondary Education (CSSVSHSE) launched by the Ministry of Human Resource Development, Government of India in 2012. The PSS Central Institute of Vocational Education (PSSCIVE) is developing curricula under the project approved by the Project Approval Board (PAB) of *Rashtriya Madhyamik Shiksha Abhiyan* (RMSA). The main purpose of the competency based curricula is to bring about the improvement in teaching-learning process and working competences through learning outcomes embedded in the vocational subject.

It is a matter of great pleasure to introduce this learning outcome based curriculum as part of the vocational training packages for the job role of **IT/ ITes CRM Non Voice** . The curriculum has been developed for the secondary students of vocational education and is aligned to the National Occupation Standards (NOSs) of a job role identified and approved under the National Skill Qualification Framework (NSQF).

The curriculum aims to provide children with employability and vocational skills to support occupational mobility and lifelong learning. It will help them to acquire specific occupational skills that

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meet employers' immediate needs. The teaching process is to be performed through the interactive sessions in classrooms, practical activities in laboratories and workshops, projects, field visits, and professional experiences.

The curriculum has been developed and reviewed by a group of experts and their contributions are greatly acknowledged. The utility of the curriculum will be adjudged by the qualitative improvement that it brings about in teaching-learning. The feedback and suggestions on the content by the teachers and other stakeholders will be of immense value to us in bringing about further improvement in this document.

Hrushikesh Senapaty

Director

National Council of Educational Research & Training

PREFACE

India today stands poised at a very exciting juncture in its saga. The potential for achieving inclusive growth are immense and the possibilities are equal y exciting. The world is looking at us to deliver sustainable growth and progress. To meet the growing expectations, India will largely depend upon its young workforce.The much-discussed demographic dividend will bring sustaining benefits only if this young workforce is Skilled and its potential is channelized in the right direction.

In order to fulfill the growing aspirations of our youth and the demand of Skilled human resource, the Ministry of Human Resource

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Development (MHRD), Government of India introduced the revised Centrally Sponsored Scheme of Vocationalisation of Secondary and Higher Secondary Education that aims to provide for the diversification of educational opportunities so as to enhance individual employability, reduce the mismatch between demand and supply of Skilled manpower and provide an alternative for those pursuing higher education. For spearheading the scheme, the PSS Central Institute of Vocational Education (PSSCIVE) was entrusted the responsibility to develop learning outcome based curricula, student workbooks, teacher handbooks and e-learning materials for the job roles in various sectors, with growth potential for employment.

The PSSCIVE firmly believes that the vocationalisation of education in the nation need to be established on a strong footing of philosophical, cultural and sociological traditions and it should aptly address the needs and aspirations of the students besides meeting the Skill demands of the industry. The curriculum, therefore, aims at developing the desired professional, managerial and communication skills to fulfill the needs of the society and the world of work. In order to honour its commitment to the nation, the PSSSCIVE has initiated the work on developing learning outcome based curricula with the involvement of faculty members and leading experts in respective fields. It is being done through the concerted efforts of leading academicians, professionals, policy makers, partner institutions, Vocational Education and Training experts, industry representatives, and teachers. The expert group through a series of consultations, working group meetings and use of reference materials develops a

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National Curriculum. Currently, the Institute is working on developing curricula and course ware for over 100 job roles in various sectors.

We extend our gratitude to all the contributors for selflessly sharing their precious knowledge, acclaimed expertise, and valuable time and positively responding to our request for development of curriculum. We are grateful to MHRD and NCERT for the financial support and cooperation in realising the objective of providing learning outcome based curricula and course ware to the States and other stakeholders under the PAB

(Project Approval Board) approved project of *Rashtriya Madhyamik Shiskha Abhiyan* (RMSA) of MHRD.

Finally, for transforming the proposed curriculum design into a vibrant reality of implementation, all the institutions involved in the delivery system shal have to come together with a firm commitment and they should secure optimal community support. The success of this curriculum depends upon its effective implementation and it is expected that the managers of vocational education and training system, including subject teachers wil make efforts to create better facilities, develop linkages with the world of work and foster a conducive environment as per the content of the curriculum document.

The PSSCIVE, Bhopal remains committed in bringing about reforms in the vocational education and training system through the learner-centric curricula and courseware. We hope that this document will prove useful in turning out more competent Indian workforce for the 21st Century.

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RAJESH P. KHAMBAYAT

Joint Director

PSS Central Institute of Vocational Education

ACKNOWLEDGEMENTS

On behalf of the team at the PSS Central Institute of Vocational Education (PSSCIVE) we are grateful to the members of the Project Approval Board (PAB) *of* Rashtriya Madhyamik Shiksha Abhiyan (RMSA) and the officials of the Ministry of Human Resource Development (MHRD), Government of India for the financial support to the project for development of curricula.

We are grateful to the Director, NCERT for his support and guidance. We also acknowledge the contributions of our colleagues at the Technical Support Group of RMSA, MHRD, RMSA Cell at the National Council of Educational Research and Training (NCERT), National Skill Development Agency (NSDA) and National Skill Development Corporation (NSDC) and IT/ ITes Sector Skill Council for their academic support and cooperation in the development of curricula.

We are grateful to the expert contributors Jayant Mishra, Consultant in IT/IteS and Dipak D. Shudhalwar, Associate Professor (CSE), PSSCIVE for their earnest effort and contributions in the development of this learning outcome based curriculum. Their contributions are dully acknowledged.

The contributions made by Vinay Swarup Mehrotra, Professor and Head, Curriculum Development and Evaluation Centre (CDEC),

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Vipin Kumar Jain, Associate Professor and Head, Programme Planning and Monitoring Cel (PPMC) and Dipak D. Shudhalwar, Associate Professor (CSE) and Head Computer Center, PSSCIVE in development of the curriculum for the employability skills are duly acknowledged.

We are also grateful to the Course Coordinator Dipak D. Shudhalwar, Associate Professor (CSE) and Head Computer Center, PSSCIVE, for bringing out this curriculum in the final form.

PSSCIVE Team

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1. COURSE OVERVIEW

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COURSE TITLE: Domestic IT Helpdesk Attendant

Domestic CRM Domestic Voice in the IT-ITeS Industry is also known as a Customer Service Associate, Customer Service Representative, Customer Care Executive, Customer Service Advisor, Helpdesk Coordinator, Customer Support Representative. Individuals in this job receive and make telephone calls which are primarily scripted, basic and routine with the assistance of a computerised system. They answer inquiries, resolve problems, record complaints and/or receive feedback. This job requires the individual to work independently and interact with customers. The individual should be result oriented and should also be able to demonstrate logical thinking and interpersonal skills; ensure prioritization of workload and should be willing to work at a desk-based job.

COURSE OUTCOMES: On completion of the course, students should be able to:

- Apply effective oral and written communication skills to interact with people and customers;
- Identify the principal components of a computer system;
- Demonstrate the basic skills of using computer;
- Demonstrate self-management skills;
- Demonstrate the ability to provide a self-analysis in context of entrepreneurial skills and abilities;
- Demonstrate the knowledge of the importance of green skills in meeting the challenges of sustainable development and environment protection;
- Identify the principal components of a computer system.
- Work safely on computer.

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- Start the computer.
- Open and use the related software.
- Exit from the software.
- Shut down the computer.
- Use the computer for data entry process.
- Collect al necessary information about the query.
- Log any decision about the query on the data entry tracking form.
- Fol ow Rules and guidelines for data entry.
- Handle queries.
- Identify and control hazards in the workplace that pose a danger or threat to their safety or health, or that of others.

COURSE REQUIREMENTS: The learner should have basic knowledge of science.

COURSE LEVEL: This course can be taken up at Intermediate level in Class 11 and Class 12.

COURSE DURATION: Total : 600 hrs

Class 11 :	300 hrs
Class 12 :	300 hrs
Total:	**600 hrs**

2. SCHEME OF UNITS AND ASSESSMENT

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This course is a planned sequence of instructions consisting of Units meant for developing employability and vocational competencies of students of Class 11 and 12 opting for vocational subject along with general education subjects. The unit-wise distribution of hours and marks for Class 11 is as follows:

CLASS 11			
	Units	**No. of Hours for Theory and Practical 300**	**Max. Marks for Theory and Practical 100**
Part A	**Employability Skills**		
	Unit 1: Communication Skills	25	**10**
	Unit 2: Self-management Skills	25	
	Unit 3: Basic ICT Skills	25	
	Unit 4: Entrepreneurial Skills	25	
	Unit 5: Green Skills	15	
	Total	**115**	**10**
Part B	**Vocational Skills**		
	Unit 1: Computer Fundamentals	60	**40**
	Unit 2: Windows Desktop Operating System	36	
	Unit 3: Computer System Maintenance in Windows	30	
	Unit 4: Computer Network Essential	34	
	Total	**160**	**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**

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

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CLASS 12			
	Units	**No. of Hours for Theory and Practical 300**	**Max. Marks for Theory and Practical 100**
Part A	**Employability Skills**		
	Unit 1: Communication Skills	25	**10**
	Unit 2: Self-management Skills	25	
	Unit 3: Basic ICT Skills	25	
	Unit 4: Entrepreneurial Skills	25	
	Unit 5: Green Skills	10	
	Total	**115**	**10**
Part B	**Vocational Skills**		
	Unit 1: Internet Applications	40	**40**
	Unit 2: Windows Server Management	60	
	Unit 3: Website Management	20	
	Unit 4: SQL Server Database Backup & Recovery	20	
	Unit 5: Network Security	20	
	Total	**160**	**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**	**10 Hours**	
	Practical File/ Student Portfolio	10	10
	Viva Voce	5	5
	Total	**15**	**15**
	Total	**300**	**100**

3. TEACHING/TRAINING ACTIVITIES

The teaching and training activities have to be conducted in classroom, laboratory/ workshops and field visits. Students should be taken to field visits for interaction with experts and to expose them to the various tools, equipment, materials, procedures and operations in the workplace. Special emphasis should be laid on the

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occupational safety, health and hygiene during the training and field visits.

CLASSROOM ACTIVITIES

Classroom activities are an integral part of this course and interactive lecture sessions, fol owed by discussions should be conducted by trained vocational teachers. Vocational teachers should make effective use of a variety of instructional or teaching aids, such as audio-video materials, colour slides, charts, diagrams, models, exhibits, hand-outs, online teaching materials, etc. to transmit knowledge and impart training to the students.

PRACTICAL WORK IN LABORATORY/WORKSHOP

Practical work may include but not limited to hands-on-training, simulated training, role play, case based studies, exercises, etc. Equipment and supplies should be provided to enhance hands-on learning experience of students. Only trained personnel should teach specialized techniques. A training plan that reflects tools, equipment, materials, skills and activities to be performed by the students should be submitted by the vocational teacher to the Head of the Institution.

FIELD VISITS/ EDUCATIONAL TOUR

In field visits, children will go outside the classroom to obtain specific information from experts or to make observations of the activities. A checklist of observations to be made by the students during the field visits should be developed by the Vocational Teachers for systematic col ection of information by the students on the various aspects. Principals and Teachers should identify the different opportunities for field visits within a short distance from the school and make

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necessary arrangements for the visits. At least three field visits should be conducted in a year.

4. CERTIFICATION

Upon successful completion of the course by the candidate, the Central/ State Examination Board for Secondary Education and the respective Sector Skill Council will certify the competency.

The National skills Qualifications Framework (NSQF) is based on outcomes referenced to the National Occupation Standards (NOSs), rather than inputs. The NSQF level descriptors, which are the learning outcomes for each level, include the process, professional knowledge, professional skills, core skills and responsibility. The assessment is to be undertaken to verify that individuals have the knowledge and skills needed to perform a particular job and that the learning programme undertaken has delivered education at a given standard. It should be closely linked to certification so that the individual and the employer could come to know the competencies acquired through the vocational subject or course. The assessment should be reliable, valid, flexible, convenient, cost effective and above al it should be fair and transparent.

Standardized assessment tools should be used for assessment of knowledge of students. Necessary arrangements should be made for using technology in assessment of students.

KNOWLEDGE ASSESSMENT (THEORY)

Knowledge Assessment should include two components: one comprising of internal assessment and second an external examination, including theory examination to be conducted by the

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Board. The assessment tools shall contain components for testing the knowledge and application of knowledge. The knowledge test can be objective paper based test or short structured questions based on the content of the curriculum.

WRITTEN TEST

It allows candidates to demonstrate that they have the knowledge and understanding of a given topic. Theory question paper for the vocational subject should be prepared by the subject experts comprising group of experts of academicians, experts from existing vocational subject experts/teachers, and subject experts from university/col eges or industry. The respective Sector Skil Council should be consulted by the Central/State Board for preparing the panel of experts for question paper setting and conducting the examinations.

The blue print for the question paper may be as follows:

Duration: 3 hrs **Max. Mark: 40**

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		No. of Questions			
	Typology of Question	Very Short Answer (1 mark)	Short Answer (2 Marks)	Long Answer (3 Marks)	Marks
1.	Remembering – (Knowledge based simple recall questions, to know specific facts, terms, concepts, principles, or theories; identify, define or recite, information)	3	2	2	13
2.	Understanding – (Comprehension – to be familiar with meaning and to understand conceptually, interpret, compare, contrast, explain, paraphrase, or interpret information)	2	3	2	14
3.	Application – (Use abstract information in concrete situation, to apply knowledge to new situations: Use given content to interpret a situation, private an example, or solve a problem)	0	2	1	07
4.	High Order Thinking Skills – (Analysis & Synthesis – Classify, compare, contrast, or differentiate between different pieces of information; Organize and/ or integrate unique pieces of information from a variety of sources)	0	2	0	04
5.	Evaluation – (Appraise, judge, and/or justify the value or worth of a decision or outcome, or to predict outcomes based on values)	0	1	0	02
	Total	5x1=5	10x2=20	5x3=15	40 (20 questions)

SKILL ASSESSMENT (PRACTICAL)

Assessment of skills by the students should be done by the assessors/examiners on the basis of practical demonstration of skills by the candidate, using a competency checklist. The competency checklist should be developed as per the National Occupation Standards (NOSs) given in the Qualification Pack for the Job Role to bring about necessary consistency in the quality of assessment across different sectors and Institutions.

The student has to demonstrate competency against the performance criteria defined in the National Occupation Standards and the assessment wil indicate that they are 'competent', or are 'not yet competent'.

The assessors assessing the skills of the students should possess a current experience in the industry and should have undergone an effective training in assessment principles and practices. The Sector

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Skil Councils should ensure that the assessors are provided with the training on the assessment of competencies.

Practical examination allows candidates to demonstrate that they have the knowledge and understanding of performing a task. This wil include hands-on practical exam and viva voce. For practical, there should be a team of two evaluators – the subject teacher and the expert from the relevant industry certified by the Board or concerned Sector Skil Council. The same team of examiners wil conduct the viva voce.

Project Work (individual or group project) is a great way to assess the practical skills on a certain time period or timeline. Project work should be given on the basis of the capability of the individual to perform the tasks or activities involved in the project. Projects should be discussed in the class and the teacher should periodical y monitor the progress of the project and provide feedback for improvement and innovation. Field visits should be organised as part of the project work. Field visits can be fol owed by a smal -group work/project work. When the class returns from the field visit, each group might be asked to use the information that they have gathered to prepare presentations or reports of their observations. Project work should be assessed on the basis of practical file or student portfolio.

Student Portfolio is a compilation of documents that supports the candidate's claim of competence.Documents may include reports, articles, photos of products prepared by students in relation to the unit of competency.

Viva voce allows candidates to demonstrate communication skills and content knowledge. Audio or video recording can be done at the

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time of viva voce. The number of external examiners would be decided as per the existing norms of the Board and these norms should be suitably adopted/adapted as per the specific requirements of the vocational subject. Viva voce should also be conducted to obtain feedback on the student's experiences and learning during the project work/field visits.

5. UNIT CONTENTS

CLASS 11

Part A: Employability Skills

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S. No.	Units	Duration in Hours
1.	Unit 1: Communication Skills	25
2.	Unit 2: Self-management Skills	25
3.	Unit 3: Basic ICT Skills	25
4.	Unit 4: Entrepreneurial Skills	25
5.	Unit 5: Green Skills	15
	Total	**115**

Unit 1: Communication Skills				
S. No.	**Learning Outcome**	**Theory (10 Hours)**	**Practical (15 Hours)**	**25 Hrs**
1.	Demonstrate knowledge of various methods of communication	• Methods of communication • Verbal • Non-verbal • Visual	• Writing pros and cons of written, verbal and non-verbal communication • Listing do's and don'ts for avoiding common body language mistakes	15
2.	Identify specific communication styles	• Communication styles- assertive, aggressive, passive-aggressive, submissive, etc.	• Observing and sharing communication styles of friends, teachers and family members and adapting the best practices • Role plays on communication styles.	10
3.	Demonstrate basic writing skills	• Writing skills to the following: • Sentence • Phrase • Kinds of Sentences • Parts of Sentence • Parts of Speech • Articles • Construction of a Paragraph	• Demonstration and practice of writing sentences and paragraphs on topics related to the subject	15
			Total Duration in Hours	**25**

Unit 2: Self-management Skills				
S. No.	**Learning Outcome**	**Theory (10 Hours)**	**Practical (15 Hours)**	**25 Hrs**

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1.	Demonstrate impressive appearance and grooming	• Describe the importance of dressing appropriately, looking decent and positive body language. • Describe the term grooming • Prepare a personal grooming checklist. • Describe the techniques of self- exploration.	• Demonstration of impressive appearance and groomed personality. • Demonstration of the ability to self- explore.	07
2.	Demonstrate team work skills	• Describe the important factors that influence in team building. • Describe factors influencing team work.	• Group discussion on qualities of a good team. • Group discussion on strategies that are adopted for team building and team work.	08
3.	Apply time management strategies and techniques	• Meaning and importance of time management – setting and prioritizing goals, creating a schedule, making lists of tasks, balancing work and leisure, using different optimization tools to break large tasks into smaller tasks.	• Game on time management. • Checklist preparation. • To-do-list preparation.	10
			Total Duration in Hours	**25**

Unit 3: Basic ICT Skills				
S. No.	**Learning Outcome**	**Theory (10 Hours)**	**Practical (15 Hours)**	**25 Hrs**
1.	Describe the role of ICT in day-to-day life.	• Introduction to ICT • Role and importance of ICT in personal life and at workplace • ICT in our daily life (examples) • ICT tools – Mobile, tab, radio, TV, email, etc.	• Discussion on the role and importance of ICT in personal life and at workplace. • Preparing posters / collages for showing the role of ICT at workplace	02
2.	Identify the various components of computer system	• Basic components of computer system. • Hardware and software. • Primary and secondary memory. • Input, Output and Storage devices.	• Identify and name the various components of computer system. • List few hardware and software. • Identify and name the primary and secondary memory. • Identify the various Input, Output and Storage devices.	04
3.	Identify various peripheral devices	• Various peripheral devices and their use. • Examples of peripherals.	• List various peripheral devices. • Give the examples of peripheral devices. • Practice using peripheral devices.	04
4.	Perform basic computer operations	• Procedure for starting and shutting down a computer. • Operating Systems (OS). • Types of OS – DOS, Windows, Linux. • Desktop of Windows and Linux. • Files and folder.	• Start the computer in proper sequence and get the intitial screen. • Identify the installed OS on computer. • Identify the destop and its various components.	07

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		• Keyboard and mouse operations. • Common desktop operations.	• Work with desktop. • Create file and folder. • Perform keyboard and mouse operations.	
5.	Connect with the world using Internet and its applications	• Introduction to Internet. • Applications of Internet. • Internet Browser. • Websites and webpages. • Email applications. • Email accounts. • Sending and receiving email. • Introduction to social media. • Blog. • Twitter. • Facebook. • Youtube. • WhatsApp. • Digital India.	• Introduce with Internet. • Explain the applications of Internet. • List the various Internet Browser. • Search the websites. • Create Email account. • Send and receive email. • Use Social Media for education. • Use Blog. • Use Twitter. • Use Facebook. • Use Youtube. • Use WhatsApp. • Use Digital India.	08
			Total Duration in Hours	**25**

Unit 4: Entrepreneurial Skills				
S. No.	**Learning Outcome**	**Theory (10 Hours)**	**Practical (15 Hours)**	**25 Hrs**
1.	Describe the significance of entrepreneurial values and attitude.	• Values in general and entrepreneurial values. Entrepreneurial value orientation with respect to innovativeness, independence, outstanding performance and respect for work.	• Listing of entrepreneurial values by the students. • Group work on identification of entrepreneurial values and their roles after listing or reading 2-3 stories of successful entrepreneur. • Exhibiting entrepreneurial values in Ice breaking, rapport building, group work and home assignments.	10
2.	Demonstrate the knowledge of attitudinal changes required to become an entrepreneur.	• Attitudes in general and entrepreneurial attitudes • Using imagination/ intuition • Tendency to take moderate risk • Enjoying freedom of expression and action • Looking for economic opportunities • Believing that we can change the environment • Analyzing situation and planning action • Involving in activity	• Preparing a list of factors that influence attitude in general and entrepreneurial attitude. • Demonstrating and identifying own entrepreneurial attitudes during the following micro lab activities like thematic appreciation test. • Preparing a short write-up on "who am I". • Take up a product and suggest how its features can be improved. • Group activity for suggesting brand names, names of enterprises, etc.	15
			Total Duration in Hours	**25**

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Unit 5: Green Skills				
S. No.	**Learning Outcome**	**Theory (07 Hours)**	**Practical (08 Hours)**	**15 Hrs**
1.	Describe importance of main sector of green economy	• Main sectors of green economy- E-waste management, green transportation, renewal energy,green construction, water management. • Policy initiatives for greening economy in India.	• Preparing a poster on any one of the sectors of green economy. • Writing a two-page essay on important initiatives taken in India for promoting green economy.	08
2.	Describe the major green Sectors/ Areas and the role of various stakeholder in green economy	• Stakeholders in green economy. • Role of government and private agencies in greening cities, buildings, tourism, industry, transport, renewable energy, waste management, agriculture, water, forests and fisheries.	• Preparing posters on green Sectors/Areas: cities, buildings, tourism, industry, transport, renewable energy, waste management, agriculture, water, forests and fisheries.	07
			Total Duration in Hours	**15**

Part B: Vocational Skills

S. No.	Units	Duration in Hours
1.	Unit 1: Computer Fundamentals	60
2.	Unit 2: Windows Desktop Operating System	36
3.	Unit 3: Computer System Maintenance in Windows	30
4.	Unit 4: Computer Network Essential	34
	Total Duration	**160**

Unit 1: Computer Fundamentals				
S. No	**Learning Outcome**	**Theory (30 Hours)**	**Practical (30 Hours)**	**60 Hrs**

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1.	Appreciate the concept of Information Technology (IT) and explore its various application areas	• Introduction to IT. • Hardware and software in IT. • IT and Information Technology Enabled. Service (ITeS). • Application areas of IT.	• List out various IT and ITeS services. • Collect the information about the various application areas of IT.	02
2.	Study the brief history and evolution of Computer	• History of computing device. • Technological variations in the generations of computers in hardware and software • Classification of computers – As per Purpose, working principle, size and storage capacity. • Specification of various types of computers with justification.	• Draw a table comparing the hardware technology of computers with example. • Draw a table comparing the programming language with example. • List out the specifications of computer with justification.	06
3.	Explain the various parts of computer system	• Different components of computer systems. • Features and specifications of different parts of computer system. • Uses of different parts of computer systems. • Different types of cables and connectors.	• Identify and list different components connectors and cables. • List features, types and specifications of different parts.	02
4.	Explain Input, Output Devices	• Introduction to various input, output devices. • Features, working of various input and output devices • Computer hardware for assistive technology	• Identify and make a list of various input, output devices • Identify various input, output devices of a given computer system. • List the various devices used for assistive technology	04
5.	Explain the various storage devices.	• Common fixed and portable storage devices and their uses. • Optical storage media. • Solid state drive, Memory sticks/Pen drives, Flash memory and data cards. • Backup and its need. • Difference between primary and secondary memory.	• Identify and list the common fixed and portable storage devices and their uses. • Identify and list the optical backing storage media and their uses.. • Classify the storage media into sequential and random.	04
6.	Explain the Motherboards, Processors and Adapter Cards	• Motherboard and its components. • Block diagram of CPU. • Various parts and functions of CPU. • Latest commonly available processor and their specifications. • Adapter cards.	• Identify the motherboard and various components mounted on it. • Draw block diagram of CPU. • Collect the make, model and specifications of commonly available motherboard and processor from the market.	06
7.	Explain the various types of internal memory	• Various types of internal memory and their uses. • Difference between various internal memory.	• List various types of internal memory and state their uses. • Differentiate the various internal memory.	06

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		• How data is stored in computer system.	• Draw the data storage diagram.	
8.	Connect I/O and multimedia devices to the respective ports	• I/O Ports. • Multimedia Ports. • Multimedia Devices. • Connectivity of multimedia devices in the respective ports. • Connectivity of I/O devices in the respective I/O ports.	• Identify the various I/O ports. • Identify the various multimedia ports. • Identify the various multimedia devices. • Connect the given I/O device in respective port. • Connect the given multimedia devices in the respective ports.	04
9.	Demonstrate the use of Graphic Cards in Video Displays	• The display device of computer. • Quality of display. • Graphic Cards and its function. • Features/ specification of graphics card.	• List the various display device of computer. • Collect the specifications of various types of graphics card with its quality of display.	06
10.	Setup and boot computer system	• Physical connectivity of various parts of computer system. • Connectivity and operation of peripheral devices. • Booting procedure.	• Verify the physical connectivity of various parts. • Start the computer system and peripherals in properly. • Check the working of computer system and peripherals. • Observe booting process and note the errors if any.	04
11.	Explore system information	• User name and password. • Operating system and application programs. • Operating system navigation to access system information. • Hardware and software configuration. • On-line help functions.	• Enter user name and password. • Identify and explore various applications installed. • List the hardware and software configuration. • Use on-line help functions.	04
12.	Explore the basic operations of Operating System.	• Concept of operating system. • Types of operating system. • Desktop applications. • Basic desktop operations.	• List various types of operating system. • Perform the basic operations on the desktop.	04
13.	Upkeep computer system and peripherals	• Tips to clean the computer parts and peripherals. • Tools and materials required to upkeep the computer parts and peripherals.	• Keep the cabinet. • Clean the keyboard and mouse • Clean the monitor • Clean the CD/DVD drive • Clean the headphone	04
14.	Follow the safety practices while using computer	• Various safety issues in Computer. • Electrical safety. • Equipment and self-grounding. • Electrostatic discharge. • Material safety. • Compliance with regulations. • Fire safety. • Tools for safety measures. • Examples with incident.	• List common health and safety issues when using a computer. • Recycle printed outputs, printer toner cartridges to maintain the green environment. • Use a monitor that consumes less power.	04

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			Total Duration in Hours	60

Unit 2: Windows Desktop Operating System				
S. No	**Learning Outcome**	**Theory (16 Hours)**	**Practical (20 Hours)**	**36 Hrs**
1.	Prepare for installation of Windows 10	• System configuration – processor, RAM, HDD. • Introduction to desktop operating system – Windows • BIOS settings. • Installation media. • Installation manual. • License agreement. • Installation key. • HDD Partitioning. • Types of file system. • Device drivers – VGA, Sound, NIC.	• Start the computer and check the BIOS settings. • Note the system configuration. • Match the requirement of OS installation with the exiting system configuration. • Set or change boot sequence in BIOS settings as per installation media. • Save the BIOS settings.	04
2.	Install and configure Windows 10 OS.	• Procedure for installing Windows 10. • Windows 10 device stetting. • Procedure to configure devices in Windows 10. • Procedure to configure network connectivity in Windows 10. • Procedure to connect wired and wireless network in Windows 10.	• Insert the media for installation. • Read and interpret the license agreement. • Make the required partitions in HDD. • Format the HDD with the required file system. • Choose the appropriate partition to install OS. • Follow the installation instructions and provide the necessary data. • Confirm for the complete installation with all device drivers.	08
3.	Managing fies in Windows	• Windows basics. • File explorer. • Working with files and folders. • Windows 10 Apps.	• Manage files and folders in Windows 10. • Copy, move, share files and folders in Windows 10.	08
4.	Use Windows utilities	• The various system utilities and its features. • Installing and using system utilities. • Installation of anti-virus. • Using anti-virus software for removal of viruses. • Firewall and its configuration. • System requirement and installation of various software and utilities.	• List out the various system utilities. • Install and use various system utilities. • Install the anti-virus software. • Run the anti-virus software to detect and remove virus. • Configure firewall. • Install and configure various software and system utilities.	08
5.	Configure and troubleshoot devices and Printers in Windows	• Windows control panel. • Configuration of various devices and printers. • Testing the working of various	• Explore the control panel for configuring the devices and printer. • Configure and test various	08

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		devices and printer. • Various options to change the settings of devices and printer. • Troubleshooting operating problems of devices and printer in Windows.	devices and printers for their operation. • Use various options to change the settings of devices and printer. • Troubleshoot operating problems of devices and printer in Windows.	
			Total Duration in Hours	**40**

Unit 3: Computer Maintenance in Windows				
S. No	**Learning Outcome**	**Theory (10 Hours)**	**Practical (20 Hours)**	**30 Hrs**
1.	Understand the Boot Process	• Boot Process. • POST Process. • Master Boot Record and Boot Sector.	• Execute and observe boot Process. • Observe and hear beep and lighting to confirm POST Process.	06
2.	Understand the Windows Registry	• Registry editor. • Hives, Keys, and Values. • Methods of Backup the Registry.	• Issue the regedit.exe on command prompt and observe the Registry setting . • Explore the Hives, Keys, and Values in Registry. • Execute the steps to backup and save the Registry.	06
3.	Understand Advanced Boot Options	• Methods of Boot Options. • Booting Mode – Safe, Command, Default, Network, Good Configuration.	• Explore the methods of boot options. • Boot the system from different media (ISCI, HDD, DVD, Flash drive, Network) and observe the process. • Boot the system in various mode and observe the execution.	06
4.	Troubleshoot Windows	• Common troubleshooting. • Methods of Recovery Images. • Methods of emergency disk repair.	• Explore the common troubleshooting. • Make Recovery Images from system. • Make emergency system recovery disk.	06
5.	Use Windows system maintenance tools	• Control panel. • Disk cleanup. • Disk fragmentation. • System restore. • On-screen keyboard.	• Explore the various settings of I/O device in control panel. • Perform Disk cleanup process to clean disk. • Perform Disk fragmentation to manage the storage space. • Restore the system to restore point (date). • Enable on-screen keyboard.	06
			Total Duration in Hours	**30**

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Unit 4: Computer Network Essential				
S. No	**Learning Outcome**	**Theory (14 Hours)**	**Practical (20 Hours)**	**34 Hrs**
1.	Describe Computer Networks	• Concept of networking. • Computer networking – features, advantages. • Types of Networks. • Common network terminology.	• Chose the right Network Type for the organisation requirement • Visit the computer network centre and observe the computer networking.	06
2.	Connect the computer in network	• Network media. • Network topology. • Network design. • Different types of Network Devices and their appropriate use. • Concepts of routing and switching.	• Identify different types of Network Devices. • Demonstrate to connect the computer in network • Prepare network using network devices.	06
3.	Explain IP addressing system.	• IP addressing. • Sub-netting Basics. • Types of IP address. • IPv4 addressing. • Subnetting.	• Identify the given IP address. • Configure IP address and subnet mask.	06
4.	Configure network devices	• Cisco Routers. • Wireless Access Points. • Backup and restoration of ISO files. • Troubleshooting issues related to configuration.	• Configure Wireless Access Points. • Perform backup and restoration of ISO files. • Troubleshoot issues related to configuration.	08
5.	Wireless Networks	• Concepts of Wireless Networks. • Wireless Standards. • Features of Wireless Network Devices. • Wireless Network Security.	• Establish wireless connectivity. • Configure settings in wireless network. • Establish network security.	08
			Total Duration in Hours	**34**

CLASS 12

S. No.	Units	Duration in Hours
1.	Unit 1: Communication Skills – IV	25
2.	Unit 2: Self-management Skills – IV	25
3.	Unit 3: Basic ICT Skills – IV	25
4.	Unit 4: Entrepreneurial Skills – IV	25
5.	Unit 5: Green Skills – IV	15
	Total	**115**

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Unit 1: Communication Skills – IV				
S. No.	**Learning Outcome**	**Theory (10 Hours)**	**Practical (15 Hours)**	**25 Hrs**
1.	Describe the steps to active listening skills	• Importance of active listening at workplace • Steps to active listening.	• Demonstration of the key aspects of becoming active listener. • Preparing posters of steps for active listening.	10
2.	Demonstrate basic writing skills	• Writing skills to the following: • Sentence • Phrase • Kinds of Sentences • Parts of Sentence • Parts of Speech • Articles • Construction of a Paragraph	• Demonstration and practice of writing sentences and paragraphs on topics related to the subject.	15
			Total Duration in Hours	**25**

Unit 2: Self-management Skills – IV				
S. No.	**Learning Outcome**	**Theory (10 Hours)**	**Practical (15 Hours)**	**25 Hrs**
1.	Describe the various factors influencing self-motivation	• Finding and listing motives (needs and desires); • Finding sources of motivation and inspiration (music, books, activities); expansive thoughts; living fully in the present moment; dreaming big.	• Group discussion on identifying needs and desire. • Discussion on sources of motivation and inspiration.	10
2.	Describe the basic personality traits, types and disorders	• Describe the meaning of personality. • Describe how personality influence others. • Describe basic personality traits. • Describe common personality disorders- paranoid, antisocial, schizoid, borderline, narcissistic, avoidant, dependent and obsessive.	• Demonstrate the knowledge of different personality types.	15
			Total Duration in Hours	**25**

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Unit 3: Basic ICT Skills				
S. No.	**Learning Outcome**	**Theory (10 Hours)**	**Practical (15 Hours)**	**25 Hrs**
1.	Prepare documentation using Word Processing Application	• Introduction to word processing. • Software packages for word processing. • Opening and exiting the word processor. • Creating a document.	• List the software and features for word processing. • Open and exit the word processor. • Create a document. • Edit the text.	10

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		• Saving document. • Text editing. • Word wrap and alignment. • Font size, type and face. • Header and Footer. • Auto Correct. • Numbering and Bullet. • Creating Table. • Password protection. • Printing document. • Find and Replace. • Page numbering. • Saving a document in various formats.	• Wrap and align the text. • Change the font type, size, and face. • Insert Header and Footer. • Use Autocorrect option. • Assign numbering and bullets to list items. • Create Table. • Save the document. • Protect the document with password. • Print the document. • Use Find and Replace. • Give page numbering. • Save the document in various formats.	
2.	Perform Tabulation using Spreadsheet Application	• Introduction to spreadsheet application. • Various spreadsheet applications. • Creating a new worksheet. • Opening workbook and entering data. • Resizing fonts and styles. • Copying and moving. • Filter and sorting. • Formulas and functions. • Password protection. • Printing a spreadsheet. • Saving a spreadsheet in various formats.	• Introduce with the spreadsheet application. • List the spreadsheet applications. • Create a new worksheet. • Open the workbook and enter text. • Resize fonts and styles. • Copy & move the cell data. • Sort and Filter the data. • Apply elementary formulas and functions. • Protect the spreadsheet with password. • Print a spreadsheet. • Save the spreadsheet in various formats.	10
3.	Prepare Presentation using Presentation Application	• Introduction to presentation software . • Software packages for presentation. • Creating a presentation. • Entering and editing text. • Adding a slide. • Deleting a slide. • Formatting text. • Inserting clipart & images. • Slide layout. • Slide transition and custom animation. • Saving a presentation. • Printing a presentation.	• Explain the features of presentation. • List the software packages for presentation. • Create a new presentation. • Add a slide to presentation. • Delete a slide. • Enter and edit text. • Format text. • Insert clipart & images. • Slide layout. • Save a presentation. • Print a presentation. document.	05
			Total Duration in Hours	**25**

Unit 4: Entrepreneurial Skills – IV				
S.	**Learning Outcome**	**Theory**	**Practical**	**25**

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No.		(10 Hours)	(15 Hours)	Hrs
1.	Identify the general and entrepreneurial behavioral competencies	• Barriers to becoming entrepreneur. • Behavioral and entrepreneurial competencies – adaptability/decisiveness, initiative/perseverance, interpersonal skills, organizational skills, stress management, valuing service and diversity.	• Administering self-rating questionnaire and score responses on each of the competencies. • Collect small story/ anecdote of prominent successful entrepreneurs. • Identify entrepreneurial competencies reflected in each story and connect it to the definition of behavioral competencies. • Preparation of competency profile of students.	10
2.	Demonstrate the knowledge of self-assessment of behavioral competencies	• Entrepreneurial competency in particular: self-confidence, initiative, seeing and acting on opportunities, concern for quality, goal setting and risk taking, problem solving and creativity, systematic planning and efficiency, information seeking, persistence, influencing and negotiating, team building.	• Games and exercises on changing entrepreneurial behavior and development of competencies for enhancing self-confidence, problem solving, goal setting, information seeking, team building and creativity.	15
			Total Duration in Hours	**25**

Unit 5: Green Skills – IV				
S. No.	**Learning Outcome**	**Theory (05 Hours)**	**Practical (10 Hours)**	**15 Hrs**
1.	Identify the role and importance of green jobs in different sectors	• Role of green jobs in toxin-free homes. • Green organic gardening, public transport and energy conservation, • Green jobs in water conservation. • Green jobs in solar and wind power, waste reduction, reuse and recycling of wastes, • Green jobs in green tourism • Green jobs in building and construction. • Green jobs in appropriate technology. • Role of green jobs in Improving energy and raw materials use • Role of green jobs in limiting greenhouse gas emissions • Role of green jobs minimizing waste and pollution • Role of green jobs in protecting	• Listing of green jobs and preparation of posters on green job profiles. • Prepare posters on green jobs.	15

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		and restoring ecosystems • Role of green jobs in support adaptation to the effects of climate change		
			Total Duration in Hours	**15**

Part B: Vocational Skills

S. No.	Units	Duration in Hours
1.	Unit 1: Internet Applications	40
2.	Unit 2: Windows Server Management	60
3.	Unit 3: Website Management	20
4.	Unit 4: SQL Server Database Backup and Recovery	20
5.	Unit 5: Network Security	20
	Total Duration	**160**

Unit 1: Internet Applications				
S. No	**Learning Outcome**	**Theory (20 Hours)**	**Practical (20 Hours)**	**40 Hrs**
1.	Use Web Browsers, Email, and the Internet effectively.	• Various web browsers with their features, and versions. • Various operations performed through web browser. • Various Email applications. • Various operations performed through Email application. • Internet surfing techniques.	• Draw the picture of various web browsers and name it. • Demonstrate the operation performed on the given web browser. • Draw the picture of various Email applications. • Demonstrate the Email operation in the given Email application. • Search for the given information on the Internet through various techniques.	08
2.	Configure and Manage Web Browsers	• Options to configure web browser. • Options and settings to manage and cutomise web browser.	• Configure the web browser as per the requirement by using appropriate options. • Manage the web browser for the desired task.	08
3.	Configure Email Client Application	• Various Email client applications. • Options to configure Email client applications.	• Configure the given Email client application as per the requirement using the appropriate option.	08
4.	Use Internet Based Application	• Various Internet based applications. • How to use the Internet applications.	• List the various Internet based applications. • Use the appropriate Internet application for given task.	08
5.	Use Online services for the given task	• Various online services with features and facility offered. • Using various online services	• List the various online services. • Use the appropriate online services for the given task.	08

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		for home or office activities. • Internet security	• Follow Internet security.	
			Total Duration in Hours	**40**

Unit 2: Windows Server Management				
S. No	**Learning Outcome**	**Theory (30 Hours)**	**Practical (30 Hours)**	**60 Hrs**
1.	Explore the hardware components of Server	• Need, importance of server. • Difference between desktop and server. • Server based PC and its configuration and capacity. • Various hardware components of server with configuration and capacity.	• Give the configuration of server based PC. • Identify the various hardware components of server. • Give the configuration of the given server component.	06
2.	Identify the server software	• Operating system required for server. • Various software with version required for server.	• Give the examples of server operating system. • Give the examples of various software with version required for server.	06
3.	Examine Storage Devices Used for Servers	• Storage devices used for server with configuration and capacity. • Use of storage devices for server.	• Identify and name the storage devices for server. Give the specifications of the given storage device. • Demonstrate the use of given storage device.	06
4.	Administer Windows Server Operating System	• Windows server operating system and its administration. • Various administration tasks to be performed on Windows server.	• Give the list of common administrative tasks of Windows server. • Perform the common system administration task on Windows server.	12
5.	Create a User Object	• A user in Windows server. • User rights and permissions. • Creating a user.	• Create a user in Windows server. • Assign the user rights and permissions.	04
6.	Create and Manage Groups	• Concept of group. • Creating a group. • Assigning a group to user. • Group Policy Infrastructure	• Create a group. • Assign a group to the user. • Manage the user group.	04
7.	Deploy a DNS Server	• DNS Server. • Deploying a DNS Server.	• Demonstrate the process to deploy the DNS Server.	06
8.	Configure a DHCP Server	• DHCP Server. • Configuring a DHCP Server	• Demonstrate the process to configure DHCP Server.	08
9.	Manage Server Application	• Applications of server. • Server application management.	• Manage the server applications.	08
			Total Duration in Hours	**60**

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Unit 3: Web Site Management				
S. No	**Learning Outcome**	**Theory (10 Hours)**	**Practical (10 Hours)**	**20 Hrs**
1.	Perform Web Site Management	• Fundamentals of Web Site Management.	• Fundamentals of Web Site Management	08
2.	Use Messaging Services	• Introduction to Messaging Services. • Various Messaging Services.	• List the various Messaging Services. • Use the given Messaging Services.	06
3.	Configure Mailbox Servers	• Mailbox Server Configuration.	• Demonstrate to configure Mailbox Servers.	06
			Total Duration in Hours	**20**

Unit 4: SQL Server Backup and Recovery				
S. No	**Learning Outcome**	**Theory (10 Hours)**	**Practical (10 Hours)**	**20 Hrs**
1.	Overview of SQL Server	• Introduction to SQL Server. • Latest version. • Installation requirement.	• Give the latest version of SQL server. • Give the requirement for installation of SQL server.	04
2.	Installing SQL Server 2008	• Installation process of SQL Server.	• Install the SQL sever on the server PC.	10
3.	Create and Configure Database	• Process to create and configure database.	• Create and configure the database on SQL server.	06
			Total Duration in Hours	**20**

Unit 5: Network Security				
S. No	**Learning Outcome**	**Theory (10 Hours)**	**Practical (10 Hours)**	**20 Hrs**
1.	Describe the Network Security	• Network Security Fundamentals	• Visit the Network Data Center and see the attached Network Security Devices	10
2.	Use the Network Security Devices	• Network Security Devices. • Uses of Network Security devices.	• Identify and use Network Security devices.	10
			Total Duration in Hours	**20**

6. ORGANISATION OF FIELD VISITS

In a year, at least 3 field visits/educational tours should be organised for the students to expose them to the activities in the workplace.

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Visit a Computer Service Centre and observe the fol owing: Location, Site, Office building, Computer System Hardware and Software, Server based Computer, Database Server, Data Storage Devices, Backup and Restore Devices, Internet and Internet connectivity, Computer Networking, Transmission of Internet services through network. During the visit, students should obtain the fol owing information from the owner or the supervisor:

1. Computer infrastructure;
2. Computer Networking infrastructure;
3. Specification of client and server computers;
4. Types of peripheral devices used in network;
5. Internet sharing amongst the clients;
6. Network operating system and its version;
7. Database server;
8. Data storage devices;
9. Methods of backup and restore operations;
10. Any other information

7. LIST OF EQUIPMENT AND MATERIALS

The list given below is suggestive and an exhaustive list should be prepared by the vocational teacher. Only basic tools, equipment and accessories should be procured by the Institution so that the routine tasks can be performed by the students regularly for practice and acquiring adequate practical experience.

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S.No.	Item Name, Description & Specification	Quantity
	HARDWARE	
1.	Computer with latest configuration or minimum Pentium Processor with 2 GB RAM, 512 GB HDD, 17" LED Monitor, NIC Card, 3 button Mouse, 105 keys key board and built-in speakers and mic.	15
2.	Laser Printer Black	01
3.	Inkjet Printers (Colour & Black)	01
4.	Scanner	01
5.	Online UPS 5 KVA	01
6.	16 Port Switches	01
7.	Air Conditioner 1.5 tonne	02
8.	Telephone line (For Internet)	01
9.	Fire extinguisher	01
	SOFTWARE	
1.	Operating System Linux and Windows	
2.	Anti Virus Latest version	
3.	LibreOffice or MS Office latest version	
	FURNITURE	
1.	Class room chairs and desks	25
2.	Computer Tables	15
3.	Straight back revolving & adjustable chairs (Computer Chairs)	15
4.	Printer Tables	02
5.	Trainers Table	01
6.	Trainers Chair	01
7.	Steel cupboards drawer type	02
8.	Cabinet with drawer	01
9.	Steel almirah big size	01
10.	Steel almirah small size	01

8. VOCATIONAL TEACHER'S/TRAINER'S QUALIFICATION

Qualification and other requirements for appointment of vocational teachers/trainers on contractual basis should be decided by the State/UT. The suggestive qualifications and minimum competencies for the vocational teacher should be as follows:

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S.No.	Qualification	Minimum Competencies	Age Limit
1	Bachelor of Engineering / Technology in Computer Science / Information Technology **OR** Master of Computer Science **OR** Master of Computer Application **OR** Master of Information Technology **OR** DOEACC B Level Certificate. The suggested qualification is the minimum criteria. However higher qualifications such as Master of Engineering / Technology in Computer Science / Information Technology will also be acceptable.	The candidate should have a minimum of 1 year of work experience in the same job role. S/He should be able to communicate in English and local language. S/He should have knowledge of equipment, tools, material, Safety, Health & Hygiene.	18-37 years (as on Jan. 01 (year)) Age relaxation to be provided as per Govt. rules

Vocational Teachers/Trainers form the backbone of Vocational Education being imparted as an integral part of Rashtriya Madhyamik Shiksha *Abhiyan* (RMSA). They are directly involved in teaching of vocational subjects and also serve as a link between the industry and the schools for arranging industry visits, On-the-Job Training (OJT) and placement.

These guidelines have been prepared with an aim to help and guide the States in engaging quality Vocational Teachers/Trainers in the schools. Various parameters that need to be looked into while engaging the Vocational Teachers/Trainers are mode and procedure of selection of Vocational Teachers/Trainers, Educational Qualifications, Industry Experience, and Certification/Accreditation.

The State may engage Vocational Teachers/Trainers in schools approved under the component of Vocationalisation of Secondary and Higher Secondary Education under RMSA in fol owing ways: 1. Directly as per the prescribed qualifications and industry experience suggested by the PSS Central Institute of Vocational Education(PSSCIVE), NCERT or the respective Sector Skill Council(SSC).

OR

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2. Through accredited Vocational Training Providers accredited under the National Quality Assurance Framework (NQAF*) approved by the National Skill Qualification Committee on 21.07.2016. If the State is engaging Vocational Teachers/Trainers through the Vocational Training Provider (VTP), it should ensure that VTP should have been accredited at NQAF Level 2 or higher.

** The National Quality Assurance Framework (NQAF) provides the benchmarks or quality criteria which the different organisations involved in education and training must meet in order to be accredited by competent bodies to provide government-funded education and training/skills activities. This is applicable to all organizations offering NSQF-compliant qualifications.*

The educational qualifications required for being a Vocational Teacher/Trainer for a particular job role are clearly mentioned in the curriculum for the particular NSQF compliant job role. The State should ensure that teachers / trainers deployed in the schools have relevant technical competencies for the NSQF qualification being delivered. The Vocational Teachers/Trainers preferably should be certified by the concerned Sector Skil Council for the particular Qualification Pack/Job role which he will be teaching. Copies of relevant certificates and/or record of experience of the teacher/trainer in the industry should be kept as record.

To ensure the quality of the Vocational Teachers/Trainers, the State should ensure that a standardized procedure for selection of Vocational Teachers/Trainers is followed. The selection procedure should consist of the following:

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1. Written test for the technical/domain specific knowledge related to the sector;

2. Interview for assessing the knowledge, interests and aptitude of trainer through a panel of experts from the field and state representatives; and

3. Practical test/mock test in classroom/workshop/laboratory.

In case of appointment through VTPs, the selection may be done based on the above procedure by a committee having representatives of both the State Government and the VTP.

The State should ensure that the Vocational Teachers/ Trainers who are recruited should undergo induction training of 20 days for understanding the scheme, NSQF framework and Vocational Pedagogy before being deployed in the schools.

The State should ensure that the existing trainers undergo in-service training of 5 days every year to make them aware of the relevant and new techniques/approaches in their sector and understand the latest trends and policy reforms in vocational education.

The Head Master/Principal of the school where the scheme is being implemented should facilitate and ensure that the Vocational Teachers/Trainers:

- Prepare session plans and deliver sessions which have a clear and relevant purpose and which engage the students;
- Deliver education and training activities to students, based on the curriculum to achieve the learning outcomes;
- Make effective use of learning aids and ICT tools during the classroom sessions;

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- Engage students in learning activities, which include a mix of different methodologies, such as project based work, team work, practical and simulation based learning experiences;
- Work with the institution's management to organise skill demonstrations, site visits, on-job trainings, and presentations for students in cooperation with industry, enterprises and other workplaces;
- Identify the weaknesses of students and assist them in up-gradation of competency;
- Cater to different learning styles and level of ability of students;
- Assess the learning needs and abilities, when working with students with different abilities
- Identify any additional support the student may need and help to make special arrangements for that support;
- Provide placement assistance

Assessment and evaluation of Vocational Teachers/Trainers is very critical for making them aware of their performance and for suggesting corrective actions. The States/UTs should ensure that the performance of the Vocational Teachers/Trainers is appraised annual y. Performance based appraisal in relation to certain pre-established criteria and objectives should be done periodical y to ensure the quality of the Vocational Teachers/Trainers. Fol owing parameters may be considered during the appraisal process:

- Participation in guidance and counsel ing activities conducted at Institutional, District and State level;
- Adoption of innovative teaching and training methods;
- Improvement in result of vocational students of Class X or Class XII;

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- Continuous up-gradation of knowledge and skills related to the vocational pedagogy, communication skills and vocational subject;
- Membership of professional society at District, State, Regional, National and International level;
- Development of teaching-learning materials in the subject area;
- Efforts made in developing linkages with the Industry/Establishments;
- Efforts made towards involving the local community in Vocational Education
- Publication of papers in National and International Journals;
- Organisation of activities for promotion of vocational subjects;
- Involvement in placement of students/student support services.

9. LIST OF CONTRIBUTORS

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