Model Curriculum

X-ray Technician

SECTOR:	**HEALTH**
SUB-SECTOR:	**Allied Health and Paramedics**
OCCUPATION:	**X- Ray Technician**
REF ID:	**HSS/ Q 0701**
NSQF LEVEL:	**3**

Skill India

Healthcare Sector Skill Council

N·S·D·C National Skill Development Corporation
Transforming the skill landscape

Certificate

CURRICULUM COMPLIANCE TO QUALIFICATION PACK – NATIONAL OCCUPATIONAL STANDARDS

is hereby issued by the

HEALTHCARE SECTOR SKILL COUNCIL

for the

MODEL CURRICULUM

Complying to National Occupational Standards of
Job Role/ Qualification Pack: 'X-Ray Technician'
QP No. 'HSS/Q 0701 NSQF Level 3'

Date of Issuance: November 11th, 2017

Valid up to: **November 31st, 2020**

** Valid up to the next review date of the Qualification Pack*

Authorised Signatory
(Healthcare Sector Skill Council)

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X- Ray Technician

CURRICULUM / SYLLABUS

This program is aimed at training candidates for the job of a "X- ray Technician", in the "Health" Sector/Industry and aims at building the following key competencies amongst the learner

Program Name	**X- ray Technician**		
Qualification Pack Name & Reference ID.	HSS/ Q 0701, v 1.0		
Version No.	1.0	**Version Update Date**	01-03-2017
Pre-requisites to Training	Preferably Class XII, but Class X is also considered in certain situations.		
Training Outcomes	**After completing this programme, participants will be able to:** • Acquire knowledge about the healthcare sector and diagnostic services • Determine radiological needs of the patient • Prepare the room & patient for the X-ray scans • Perform radiological diagnostic tests such as X- ray scans under the guidance of a radiologist. • Ensure radiation safety measures & act accordingly • Perform dark room techniques • Assess faults in X-ray machine or process and perform remedial measures (Machine know how) • Demonstrate troubleshooting skills whenever required • Demonstrate polite and strategic communication skills, grooming skills, professional etiquettes. • Practice infection control measures • Explain techniques to maintain the personal hygiene needs • Describe actions in the event of medical and facility emergencies • *All standards, procedures and equipment should comply with Atomic Energy Regulatory Board (AERB) regulations and rules		

This course encompasses 14 out of 14 National Occupational Standards (NOS) of "X- ray Technician" Qualification Pack issued by "Healthcare Sector Skill Council of India".

Sr. No.	Module	Key Learning Outcomes	Equipment Required
1	**Introduction to healthcare systems & diagnostic services** **Theory Duration** (hh:mm) 03:00 **Practical Duration** (hh:mm) 02:00 **Corresponding NOS Code** Introduction	• Understand basic concept of healthcare service providers (primary, secondary & tertiary) • Acquire basic understanding of hospital functions • Acquire basic understanding of X-ray & radiology diagnostic facilities • Understand basic concept of diagnostic services at different levels :(National / State / District)	Visit to healthcare facility & radiology diagnostic service
2	**Role of the X-ray technician** **Theory Duration** (hh:mm) 04:00 **Practical Duration** (hh:mm) 02:00 **Corresponding NOS Code** Introduction	• Develop broad understanding of the role of X-ray technician and difference between X-ray technician & radiographers • Identify diagnostic facility maintenance needs to be taken care by X-ray technician • Ensure patient comforts and safety • Develop understanding of X-ray Test Results • Exhibit ethical behaviour • Develop understanding of radiation and safety standards	E-module learning
3	**Basic sensitization of structure & function of human body** **Theory Duration** (hh:mm) 15:00 **Practical Duration** (hh:mm) 10:00 **Corresponding NOS Code** HSS/ N 0711	• Understand the basic structure and function of the body and its associated components including: ✓ cells, tissues & organs ✓ cardiovascular system ✓ respiratory system ✓ musculoskeletal system ✓ endocrine system ✓ digestive system ✓ urinary system ✓ reproductive system ✓ integumentary system ✓ lymphatic system ✓ nervous system including sensory system- eye & ears ✓ special senses – smell, taste, visual	Charts, Diagrams, models, e-module, Anatomical structures of human body

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		and equilibrium & Hearing ✓ immune system • Understand process, condition & resources required by the body to support healthy functioning ✓ body regulation including maintenance of body temperature, fluid & electrolyte balance, elimination of body wastes, maintenance of blood pressure ✓ protection form infection ✓ active & Passive physical activities	
4	**Introduction to medical terminology & related equipments in the field of X-ray** **Theory Duration** (hh:mm) 10:00 **Practical Duration** (hh:mm) 10:00 **Corresponding NOS Code** HSS/ N 0713, HSS/ N 0711	• Acquire knowledge about commonly used medical terms in radiology esp. X-ray field • Acquire basic understanding of medical abbreviations. • Explain the roles of various support staff involved in the X-ray department. • Familiarize with the various equipment in X-ray department like ✓ X- ray films ✓ film- boxes ✓ Cassettes. ✓ The dark room ✓ Loading of the cassettes	References use to learn medical terminologies, use of internet to learn medical terms
5	**General principles of hospital practice and patient care** **Theory Duration** (hh:mm) 06:00 **Practical Duration** (hh:mm) 05:00 **Corresponding NOS Code** Introduction	• **To explain the various common Hospital procedures**: Hospital staffing and organisation; records relating to patients and departmental statistics; professional attitude of the technologist to patients and other members of the staff; medico- legal aspects; accidents in the departments, appointments, organisation; minimising waiting time; out-patient and follow-up clinics; stock-taking and stock keeping. • **To discuss the basic principles in the care of the patient :** First contact with patients in the department; management of chair and stretcher patients and aids for this, management of the unconscious patient; elementary hygiene; personal cleanliness; hygiene in relation to patients (for example clean linen and receptacles, nursing care; temperature pulse and	e- modules

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		respiration; essential care of the patient who has a tracheotomy; essential care of the patient who has a colostomy; bedpans and urinals; simple application of a sterile dressing. • **To understand the principle of Infection control**: Bacteria, their nature and appearance; spread of infections; auto-infection or cross-infection; the inflammatory process; local tissue reaction, general body reaction; ulceration; asepsis and antisepsis. • **To discuss principles of asepsis:** Sterilisation, methods of sterilisation; use of central sterile supply department; care of identification of instruments	
6	**Radiation Hazards and Protection** **Theory Duration** (hh:mm) 10:00 **Practical Duration** (hh:mm) 05:00 **Corresponding NOS Code** HSS/ N 9608	• Develop understanding of various radiation & Radiation Hazards • comply with Atomic Energy Regulatory Board (AERB) regulations and rules • Determine effects of radiation, radiation hazards, film badge. • Employ measures for protection of himself and others from Radiation hazards	PPE, Mannequins, Charts/videos/eLearning modules, examination table, Radiation safety aprons, TLD badges, Lead aprons, Full Body shields
7	**Safety & First Aid** **Theory Duration** (hh:mm) 05:00 **Practical Duration** (hh:mm) 05:00 **Corresponding NOS Code** HSS/N 9606, HSS/N 9603	• Develop understanding regarding precautions to ensure self-safety & patient's safety • Describe common emergency conditions and what to do in medical emergencies • Describe basics of first aid • Learn about disaster management and techniques to deal with it	Patient safety tools such as wheel chairs, trolleys, side rails, PPE, first aid kit, betadine, cotton, bandages, sanitizers, disinfectants etc.
8	**Personnel Hygiene** **Theory Duration** (hh:mm) 05:00 **Practical Duration** (hh:mm) 05:00	• Develop understanding of the concept of healthy living • Develop understanding & procedures of hand hygiene • Develop techniques of grooming • Be equipped with techniques of use of PPE & radiation safety (lead	Self-learning and understanding mannequin, chart and poster demonstration, heart impressions for easy learning and understanding.

Sr. No.	Module	Key Learning Outcomes	Equipment Required
	Corresponding NOS Code HSS/N 9610, HSS/N 9606	apron, TLD badges etc) • Ensure self-vaccination against common Infectious Diseases. • Learn about needle stick injury and measures to curb	
9	**Radiation Physics & Physics of Diagnostic X-ray.** **Theory Duration** (hh:mm) 15:00 **Practical Duration** (hh:mm) 05:00 **Corresponding NOS Code** Introduction	• Discuss the Basic concepts used in X-ray department: basic units, heat, acoustics etc. • Explain the units and measurements, temperature and heat, SI units of above parameters, atomic structure, nucleus, atomic number, mass number electron orbit and energy levels, periodic table, isotopes, isobars, ionisation and excitation. • Describe the concept of Radioactivity: natural and artificial radioactivity, alpha decay, beta decay and spectra, gamma emission, positron decay electron capture and internal conversion, exponential decay-half life-unit of activity, specific activity, nuclear fission, nuclear reactor, radiation sources-natural and artificial-production of radio isotopes-reactor produced isotopes-fission products-gamma ray source for medical uses. • Develop understanding about X-rays basics: hands and soft X-rays, production and properties, continuous and characteristic X-rays, quality of X-rays, heel effect, thematic omission • Develop understanding about X-ray Technology: X-ray tubes ,different parts of an X-ray tube, stationary anode tube, rotating anode tube, beam restrictors, aperture diagrams, collimators, cones and cylinders, grids and different types of grid • Develop understanding about effects of X-ray	e- modules, text books
10	**Radio Diagnosis Equipments: maintenance & machine know how** **Theory Duration** (hh:mm)	• Learn about machine parts of the X-ray machine. • Learn about related accessories to machine • Learn about machine guide given by the manufacturer • Develop understanding regarding	X-ray films, darkroom, X ray cassette, intensifying screen, image intensifier/ scanners, X-ray tube, mannequins, Charts/videos/eLearning

Sr. No.	Module	Key Learning Outcomes	Equipment Required
	10:00 **Practical Duration** (hh:mm) 10:00 **Corresponding NOS Code** HSS/ N 0713	maintenance and Q.A procedures of the X-ray machines. • Discuss about the concept of Portable/Mobile X-ray units- Equipment for mobile X-ray machine • Describe the principle behind the working of portable X-ray machines, uses of portable X-ray machines, mobile image intensifiers, capacitor discharge unit • Enlist the advantages and limitations of the portable X-ray machines, positioning differences. • Explain the skills in using mobile units • Explain the concept of radiation protection. • Describe the mobile units types, differences, cordless mobiles and selection of equipment. • Perform routine basic maintenance procedures for radiological equipment • Acquire knowledge that how to contact vendors and suppliers for maintenance and repair of radiological equipment	modules, examination table, radiation safety aprons.
11	**X- ray techniques & positioning** **Theory Duration** (hh:mm) 13:00 **Practical Duration** (hh:mm) 20:00 **Corresponding NOS Code** HSS/ N 0714, HSS/ N 0713	• Acquire knowledge regarding anatomical terminology • Acquire knowledge regarding Positioning terminology • Acquire knowledge regarding Projection terminology • Acquire knowledge regarding Exposure factors, Millie ampere, kilovolt age • Learn about chest & thorax bones, chest-PA, lordotic view(Apicogarm), oblique lateral, thoracic inlet view, decubitus view • Learn about abdomen, general preparation of patient, positioning for fluid and air levels, plain film exam, principle advantage, techniques and applications • Learn about upper limb, fingers, hands, carpal-tunnel view, wrist-projections, projections for scaphoid, forearm, elbow, humerus, shoulder joints, acromio-clavicular joint, sterno-clavicular joint, clavicle &	X-ray films, darkroom, x ray cassette, intensifying screen, image intensifier/ scanners, X-ray tube, mannequins, charts/videos/e-learning modules, examination table, radiation safety aprons, TLD badges, lead aprons, full body mannequins, charts describing various radiographic positions, charts/videos/e-learning modules, examination table, radiation safety aprons, TLD badges, lead aprons

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		scapula. • Learn about lower limb, toes, feet, calcaneum, ankle joint, leg bones, different views of knee patella, inter condylar notch, and femur • Learn about vertebral column, odontoid, cervical spine, cervico-thoracic spin, dorsal spine, thoraco-lumbar spine, lumbosacral spine, sacrum, coccyx, scoliosis, kyphosis, flexion extension, and both oblique views of spines. • Learn about hips & pelvis, pelvis with both hip joints in different positions, internal and external rotation, frog position, SI joint. • Learn about ward mobile radiography like electrical supply, radiation protection, instruction to be followed for portable radiography. • Learn about operation theatre technique such as general precautions, asepsis in techniques. Selection of exposure risks, radiation protection. • Learn about others related like dental radiography, macro & micro radiography, cine radiography, localization of foreign body, battery operated units (conducer), mass miniature radiography, other emergency radiography	
12	**X- ray Films** **Theory Duration** (hh:mm) 10:00 **Practical Duration** (hh:mm) 10:00 **Corresponding NOS Code** HSS/ N 0714	• Develop understanding about construction of X-ray films and characteristics curve density and contrast film unsharpness film, fog, types of films packaging and storage of films X-ray cassettes • Develop understanding about intensifying screens & fluorescent screens • Develop understanding about processing of X-ray films, manual processing developer and developing solution fixer and fixing solution replenishment rapid fixer • Develop understanding about silver recovery	intensifying screen, X-ray films, darkroom, X-ray cassette, intensifying screen, image intensifier/ scanners, X-ray tube, mannequins, charts/videos/e-learning modules, examination table
13	**X-ray Film / Image processing techniques**	• Develop understanding about location, layout, construction of X-	intensifying screen, X-ray films, darkroom, X-

Sr. No.	Module	Key Learning Outcomes	Equipment Required
	(including dark room techniques) **Theory Duration** (hh:mm) 10:00 **Practical Duration** (hh:mm) 15:00 **Corresponding NOS Code** HSS/ N 0714	ray film & its cross over effect, intensifying screens and cassettes, types of cassettes. • Develop understanding about the film processing: development. The nature of development-manual or automatic Ph. scale. • Develop understanding about the dark room illuminations - white light and safe lighting • Describe X-ray film, X-ray film construction and characteristics; composition of single and double coated • Describe cassettes and screens. • describe the types of radiographic films applications , advantages/limitations of different types structure, properties of different parts • Describe the process of film storage, handling, film wrappings, angling of exposed and unexposed films, safe light requirements. • Describe the concept radiographic image: meaning of radiographic image contrast, density, resolution, sharpness, magnification and distortion of image, noise and blur. primary radiological image formation, image quality ,unsharpness, resolution, fog and noise , use of contrast media density, • Explain contrast, brightness, optical density measurements- image recording devices. • explain the steps of image processing, film developing principles, acidity, alkalinity, ph., the processing cycle process of film developing- to carry out the mechanism of processing in the following steps: 1. marking the film 2. developing 3. rinsing 4. fixing 5. washing 6. drying 7. checking • Describe development of developer	ray cassette, intensifying screen, image intensifier/ scanners, X-ray tube, mannequins, charts/videos/e-learning modules, examination table, radiation safety aprons

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		solution, constituents of developer. • Describe concept of fixing, fixer solution, composition of fixer, washing, drying replenishment, checking and adjusting replenishment rates, other processing solution. • Understand effect of temperature and development time, film processing methods, common errors and faults while processing, manual and automatic processing,latent image formation, silver recovery and economics. • Explain automatic processing, automatic film handling systems , automated processors , equipment for film processing, functions of various components, film roller transport, transport time -film feed system, importance and relation to temp, fixed and variable time cycles, care and maintenance, cleaning routine and methods of cleaning. • Explain radiographic illuminators: and viewing conditions, visual acuity and resolution. • Describe dark room, site, layout, dark room design, construction, processing area, illumination, safe, light compatibility, entrance safe lighting, types, storage, shelving of films, cleaning and maintenance.	
14	**Maintenance of the processing tank** **Theory Duration** (hh:mm) 05:00 **Practical Duration** (hh:mm) 05:00 **Corresponding NOS Code** HSS/ N 9610	• Maintain the contents of processing tank. • Explain the method of rinsing and washing of the processing tank which holds the solutions of developer and fixer, and water for rinsing and washing the films. • Describe the method of changing the developing and fixing solutions regularly, since they become weaker with use and age.	
15	**Aftercare proceedings and dismantling of the equipments**	• Perform cleaning the cassettes and screens • Perform storing of the equipments	cassettes, storage area

Sr. No.	Module	Key Learning Outcomes	Equipment Required
	Theory Duration (hh:mm) 10:00 **Practical Duration** (hh:mm) 10:00 **Corresponding NOS Code** HSS/ N 9610	• Maintain the inventory • Ensure timely monitoring of the X-ray equipments.	
16	**Patient care & medical ethics** **Theory Duration** (hh:mm) 05:00 **Practical Duration** (hh:mm) 05:00 **Corresponding NOS Code** HSS/ N 0712, HSS/ N 0711	• Monitor patient vital signs like temperature, pulse, respiration and blood pressure, normal values and methods of taking and recording them. • Develop communication skills with patient, general comfort and reassurance to the patient • Promote patient education and explaining about the study, drugs used in the preparation of the patient. • Acquire skills of handling of an unconscious patient-shifting of patients, handling of geriatric, paediatric and trauma patients, handling female patients, pregnant women. • Acquire skills of care of patient in Communicable diseases, hygiene in the department-cross infection and prevention-handling of infectious patients in the department. • **Understand the ethics of medical practice-** professionalism essential, qualities of the X-ray. • Understand the professional and personal qualities • Explain X-ray technician's clinical and ethical responsibilities • Discuss the concept of misconduct and malpractice. • Explain the legal issues pertaining to X-ray technology.	Laptop, white board, marker, projector
17	**Bio Medical Waste Management** **Theory Duration** (hh:mm) 05:00	• Understand the role of an infection control team • Develop understanding of importance of proper and safe disposal of bio-medical waste & treatment	Different coded color bins, different variety of bio medical waste management, visit to treatment plan of bio medical waste etc

Sr. No.	Module	Key Learning Outcomes	Equipment Required
	Practical Duration (hh:mm) 05:00 **Corresponding NOS Code** HSS/ N 9609	• Develop understanding of categories of bio-medical waste • Learn about disposal of bio-medical waste, color coding, types of containers, transportation of waste, etc. • Develop broad understanding of standards for bio-medical waste disposal • Develop broad understanding of means of bio-medical waste treatment	
18	**Radiation Safety** **Theory Duration** (hh:mm) 05:00 **Practical Duration** (hh:mm) 10:00 **Corresponding NOS Code** HSS/ N 9608	• Understand about radiation safety guidelines • Develop understanding about code of proactive for the protection of persons against joining radiation, protective materials, lead, lead equivalent, building materials • Develop understanding about Radiation protection devices and personal monitoring devices • Develop understanding about Late and immediate effects of radiation • Develop understanding about Maximum Permissible Dose (MPD) • Develop understanding about occupational exposure • Develop understanding about occasional exposure • Develop understanding about Methods of protection against radiation • Develop understanding about recommended diagnostic installation • Develop understanding about proper protective device • Develop understanding about The equipment is satisfactory • Develop understanding about The work practices are satisfactory • Develop understanding about Radiation protection in fluoroscopic procedure • Develop understanding about Advancements in low dose in medical science	Laptop, white board, marker, projector
19	**Quality assurance in X-ray technology.**	• Develop understanding about quality control • Develop understanding about	Internet use for learning and adopting best practices

Sr. No.	Module	Key Learning Outcomes	Equipment Required
	Theory Duration (hh:mm) 10:00 **Practical Duration** (hh:mm) 10:00 **Corresponding NOS Code** HSS/N 9611	periodic testing of the X-ray equipment. • Develop understanding about Evaluation of the test results. • Develop understanding for maintaining a log about the equipment being tested • Understand the significance of quality, perception & its dimension • Understand the components of quality system • Enumerate the stages & elements quality system • Understand the process of quality system • Understand the significance of attending CME's for technician • Develop a broad understanding regarding 1) Hospital Information System 2) Quality Improvement Plan 3) Total Quality Management • Understand difference between quality control and assurance • Understand the factors which influences quality of care	Demonstration of ideal practices by the clinical instructor
20	**Act within the limits of competence and authority** **Theory Duration** (hh:mm) 05:00 **Practical Duration** (hh:mm) 05:00 **Corresponding NOS Code** HSS/ N 9603	• Understand the meaning of relations and types of relationship • Understand effective working relationships with the people external to the team, with which the individual works on a regular basis • Understand the effect of boundary violation in technician client relationships • Understand the code of ethics for radiology technicians quality system • Enumerate the stages & elements quality system	Internet use for learning and adopting best practices
21	**Work effectively with others** **Theory Duration** (hh:mm) 05:00 **Practical Duration** (hh:mm) 05:00 **Corresponding NOS**	• Understand the importance of a team and team work • Understand the types of team in health care organization • Understand the elements and principles of team work and team based health care • Understand how to manage the conflict in health care facility • Understand the concept on how to handle the situation when other staff	Internet use for learning and adopting best practices, role plays

Sr. No.	Module	Key Learning Outcomes	Equipment Required
	Code HSS/ N 9603	is on emergency leave.	
22	**Consent, Documentation & Records** **Theory Duration** (hh:mm) 05:00 **Practical Duration** (hh:mm) 05:00 **Corresponding NOS Code** Introduction, HSS/ N 0715	• Understand guidelines for documentation • Learn various types of records of importance for Radiology Technician • Understand use and importance of records and consent • Understand abbreviations and symbols • Enter, transcribe, record, store, or maintain information in written or electronic/magnetic form • Imbibe the concept of proper filing and documentation requires in X-ray department. • Ensure a register containing names and personal details of the patients, and the type of X-ray examinations. • Ensure the X-ray films for each patient (the X-ray film file) should be kept for at least 5 years. • Keep details of the number and size of films used each month (a separate record for each size of film); the chemicals used each month; and the drugs used each month (the supply record).	Internet use for learning and adopting best practices
23	**Manage work to meet requirements** **Theory Duration** (hh:mm) 05:00 **Practical Duration** (hh:mm) 05:00 **Corresponding NOS Code** Introduction	• Develop broad understanding regarding management of work so as to meet professional expectations • Understand the significance of keeping the hospital clean • Understand the significance of maintaining confidentiality in work environment • Understand how to manage stress	Internet use for learning and adopting best practices
24	**Basic Computer Knowledge** **Theory Duration** (hh:mm) 05:00	• Explain what is health information communication technology • Explain the application of ICT in the medical records department • Gain broad understanding about Application of computers in	Computer/Internet

Sr. No.	Module	Key Learning Outcomes	Equipment Required
	Practical Duration (hh:mm) 10:00 **Corresponding NOS Code** Introduction	laboratory Practice ✓ Introduction to Computers: ✓ Block diagram ✓ Input and Output devices ✓ Storage devices • Apply basic operating systems of computer ✓ Need of Operating systems (OS) ✓ Function of OS ✓ Windows 2000 – Utilities and basic operations ✓ Microsoft office 2000 – MS Word, MS Excel	
	Total Duration **Theory Duration 181:00** **Theory/ Duration 179:00**	**Unique Equipment Required:** Laptop, white board, marker, projector, first aid kit, X-ray Films, Darkroom X-ray cassette, Intensifying screen, Image Intensifier/ Scanners, X-ray Tube, Mannequins, Charts/videos/eLearning modules, examination table, Radiation safety aprons, TLD badges, Lead aprons, Full Body Mannequin – Basic, CPR Mannequin, Airway Mannequin, Ambu Bag with Mask (Adult), AED Trainer with Adult Pad, Male Multi Veno IV Arm, Liquid Soap Bottle, Mask – packet, Shoe Cover – packet, Hair Cap – packet, Mackintosh, Sand Bag, Fire Extinguisher 5 KG ABC type, Weighing Machine, Duster, Paper (Ream of 500), Cleaning Solution (Colin), Desktop, Intel Core I3, with 2 GB Ram, 500 GB, Hard Disk with accessories with internet facility, T V Monitor 42 Inch LCD TV / LCD Projector, White Board, Extension Cord, Speakers 40 Watt set of two, Printer with Scan and copy function Wi fi with economical printing, dry view for dry procession, modern version of dark room , thyroid shield, fluoroscopy Class Room equipped with following arrangements: • Interactive lectures & Discussion • Brain Storming • Charts & Models • Activity • Video presentation • Visit to Primary Health Centre, Hospital set-up	

- Grand Total Course Duration 360:00 Hours (181:00 Hours duration for Class Room & 179:00 Hours Skill Lab Training)
- 240 Hours of mandatory OJT/Internship/Clinical or Laboratory Training)

(This syllabus/ curriculum has been approved by SSC: Healthcare Sector Skill Council)

Annexure 1: Trainer Prerequisites for Job role: "X- Ray Technician" mapped to Qualification Pack: "HSS/Q0701, version 1.0"

Sr. No.	Area	Details
1	**Description**	To deliver accredited training service, mapping to the curriculum detailed above, in accordance with the Qualification Pack
2	**Personal Attributes**	Aptitude for conducting training, and pre/ post work to ensure competent, employable candidates at the end of the training. Strong communication skills, interpersonal skills, ability to work as part of a team; a passion for quality and for developing others; well-organised and focused, eager to learn and keep oneself updated with the latest in the mentioned field.
3	**Minimum Educational Qualifications**	• B.Sc. in Radiology with two years' experience or Medical graduate with post graduate degree in Radiology • Diploma in Radiology/X-ray with three years of experience
4a	**Domain Certification**	Certified for Job Role: X-ray technician" mapped to QP: HSS/ Q 0701, v 3.0 version 1.0. With scoring of minimum 80%.
4b	**Platform Certification**	Recommended that the Trainer is certified for the Job Role: "Trainer", mapped to the Qualification Pack: "MEP/Q0102" with scoring of minimum 80%.
5	**Experience**	• Two years of experience as B.Sc. Radiology • Three years of experience as diploma in radiology/ X-ray

Annexure 2: Assessment Criteria

Assessment Criteria	
Job Role	X-ray Technician
Qualification Pack	HSS/ Q 0701, v.3
Sector Skill Council	Healthcare Sector Skill Council

Sr. No.	Guidelines for Assessment
1	Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC
2	The assessment for the theory part will be based on knowledge bank of questions created by the SSC
3	Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below)
4	Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training center based on this criteria
5	To pass the Qualification Pack, every trainee should score as per assessment grid.
6	In case of successfully passing only certain number of NOS's, the trainee is eligible to take subsequent assessment on the balance NOS's to pass the Qualification Pack

Assessment Form (To be filled by Assessor for Each Trainee)							
Job Role	X Ray Technician	Trainee Name	-	UID No.	-	Batch	-
Qualification Pack	HSS/ Q 0701	Training Partner	-	Date	-		
Sector Skill Council	Healthcare	Name of Assessor		-			
Name & Signature of Representative & Stamp of Assessing Body:		-					
Skills Practical and Viva (80% weightage)							
-		Marks Allotted		Marks Awarded by Assessor			
Grand Total-1 (Subject Domain)		400		-			
Grand Total-2 (Soft Skills and Communication)		100		-			
Grand Total-(Skills Practical and Viva)		500		-			
Passing Marks (80% of Max. Marks)		400		PASS/FAIL			
Theory (20% weightage)							
-		Marks Allotted		Marks Awarded by Assessor			
Grand Total-1 (Subject Domain)		80		-			
Grand Total-2 (Soft Skills and Communication)		20		-			
Grand Total-(Theory)		100		-			

Passing Marks (50% of Max. Marks)	50	PASS/FAIL
Grand Total-(Skills Practical and Viva + Theory)	600	0
Overall Result	Criteria is to pass in both theory and practical individually. If fail in any one of them, then candidate is fail	PASS/FAIL

Assessment Form (To be filled by Assessor for Each Trainee)							
Job Role	X ray Technician	Trainee Name	-	UID No.	-	Batch	-
Qualification Pack	HSS/ Q 0701	Training Partner	-	Date	-		
Sector Skill Council	-	Name of Assessor		-			
Name & Signature of Representative & Stamp of Assessing Body:		-					
Skills Practical and Viva (80% weightage)							
-		Marks Alloted		Marks Awarded by Assessor			
Grand Total-1 (Subject Domain)		400		-			
Grand Total-2 (Soft Skills and Communication)		100		-			
Grand Total-(Skills Practical and Viva)		500		-			
Detailed Break Up of Marks		Skills Practical & Viva					
Subject Domain		Pick any 2 NOS each of 200 marks totalling 400					

National Occupational Standards (NOS)	Performance Criteria (PC)	Total Marks (400)	Out Of	Marks Allocation		Marks Awarded by Assessor		Grand Total of Practical
				Viva	Skills Practical	Viva	Skills Practical	
1. HSS/ N 0711: Comprehend conventional radiological needs of patients	PC1. Explain the subdivisions of anatomy, terms of location and position,fundamental planes, vertebrate structure of man, organisation of the body cells and tissues	200	50	20	30			
	PC2. Explain the pathology of various systems: cardiovascular system, respiratory system, central nervous system, musculoskeletal system,		20	40	20			

	GIT, GUT and reproductive system							
	PC3. Explain the pathology of radiation injury and malignancies		20	20	0			
	PC4. Understand specific requests of physicians with respect to the scans required		20	10	10			
	PC5. Take medical history of the patient and document it as required		30	15	15			
	PC6. Understand and interpret instructions and requirements documented by the physician in the patient's prescription		30	20	10			
	PC7. Determine the radiological diagnostic tests required for the patient based on the physician's prescription and the medical history		30	20	10			
	TOTAL		200	145	95	0	0	
2. HSS/ N 0712: Prepare the patient and the room for Conventional Radiological procedure	PC1. Prepare the room, apparatus and instruments for conventional radiological procedures like X-ray, BMD or Mammography	200	20	10	10			
	PC2. Set up the machine for the desired procedure		10	4	6			
	PC3. Position the patient correctly for an X-ray in the following positions: a. Erect b. Sitting c. Supine d. Prone e. Lateral f. Oblique g. Decubitus		30	5	25			
	PC4. Explain relative positions of X-ray tube and patient and the relevant exposure factors related to these		10	5	5			

	PC5. Explain the use of accessories such as Radiographic cones, grid and positioning aids		10	6	4			
	PC6. Explain the anatomic and physiological basis of the procedure to be undertaken		10	5	5			
	PC7. Explain the radiographic appearances of both normal and common abnormal conditions in order to ensure application of the appropriate radiographic technique		10	5	5			
	PC8. Apply modifications in positioning technique for various disabilities and types of subject		15	5	10			
	PC9. Explain the principles of radiation physics detection and measurement		15	7	8			
	PC10. Explain the biological effects of radiation		10	3	7			
	PC11.Explain the principles of radiation protection: Maximum permissible exposure concept b. Annual dose equivalent limits (ADEL) ALARA concept c. International recommendations and current code of practice for the protection of persons against ionising radiation from medical and dental use		10	7	3			
	PC12.Explain the use of protective materials: a. Lead b. Lead – impregnated substances c. Building materials d. Concept of barriers e. Lead equivalents and variations f. Design of X-ray tubes related to protection. g. Structural shielding design (work-load, use factor, occupancy factor,		10	6	4			

	distance							
	PC13. Explain the instruments of radiation protection, use of gonad shield and practical methods for reducing radiation dose to the patient		20	10	10			
	PC14. Ensure protection of self, patients, departmental staff and public from radiation through use of protection instruments and monitoring personnel and the work area		20	10	10			
	TOTAL		200	88	112	0	0	
3. HSS/ N 0713: Operate and oversee operation of conventional radiological equipment	PC1. Describe the construction and operation of general radiographic equipment	200	20	8	12			
	PC2. Reliably perform all non-contrast plain Radiography, and contrast radiography in special situations		20	15	5			
	PC3. Apply quality control procedures for all radiologic equipment		20	10	10			
	PC4. Control and manipulate parameters associated with exposure and processing to produce a required image of desirable quality		20	15	5			
	PC5. Practice the procedures employed in producing a radiographic image		20	10	10			
	PC6. Describe methods of measuring exposure and doses of radiographic beams		10	0	10			

	PC7. Discuss and apply radiation protection principles and codes of practice		30	15	15			
	PC8. Demonstrate an understanding of processing of images in digital form and be familiar with recent advances in imaging		20	5	15			
	PC9. Set up the X-ray machine for the procedure		20	15	5			
	PC10. Carry out routine procedures associated with maintenance of imaging and processing systems		10	4	6			
	PC11. Ensure protection of patients, departmental staff and public from radiation through use of protection instruments and monitoring personnel and the work area		10	2	8			
	TOTAL		200	99	101	0	0	
4. HSS/ N 0714: Process X-ray films/ Images	PC1. Explain the principles of conventional radiographic imaging	200	30	30	0			
	PC2. Apply knowledge of conventional radiographic imaging to the production of radiographs and the assessment of image quality		30	10	20			
	PC3. Understand the construction and operation of image processing equipment		20	10	10			
	PC4. Control and manipulate parameters associated with exposure and processing to produce a required image of desirable quality		30	15	15			
	PC5. Perform X-ray film / image processing techniques (including dark room techniques)		40	10	30			
	PC6. Explain and implement the fundamentals, concepts and applications of processing of images in digital form using computer based systems		30	10	20			
	PC7. Carry out quality control for automatic film processing, evaluate and act		20	5	15			

	on results							
	TOTAL		200	90	110	0	0	
5.HSS/ N 0715: Prepare and document conventional radiological reports	PC1. Correctly identify anatomical features on the radiographs and identity some major pathological and traumatic conditions	200	60	30	40			
	PC2. Seek the advice of the Radiologist on conditions identified		60	40	30			
	PC3. Document the comments and diagnosis of the Radiologist in a report for the patient		60	40	20			
	PC4. Maintaining the patient record		20	5	15			
	TOTAL		200	110	90	0	0	
HSS/ N 9614 : Recognize Healthy body systems	PC1. Correctly use and interpret the medical terminology that describes normal structure, function & location of major body systems	200	30	10	20			
	PC2. Correctly use and interpret the information that relates to the interrelationship between major components of each body system and other structure		40	20	20			
	PC3. Review the factors that contribute to maintain whole body health		60	20	40			
	PC4. Evaluate how relationship between different body systems affect and support healthy functioning		40	10	30			
	PC5. Enhance quality of work by using and sharing information about healthy functioning of the body		30	10	20			
	TOTAL		**200**	**70**	**130**			
7. HSS/ N 9608: Follow radiation safety guidelines	PC1. Confirm sources of radiation and likely type of exposure for all individuals within the work area	200	20	15	5			
	PC2. Apply appropriate assessment methodology suitable for source, type of exposure, dose, level of risk		30	20	10			

	and the recipients' exposure time							
	PC3. Confirm that all required procedures and associated safety measures are compliant with current and relevant legislation requirements		20	15	5			
	PC4. Determine and assess the appropriateness of the projected radiation dose over a suitable period of time for an individual or key staff and other personnel		30	20	10			
	PC5. Record the results of the assessment accurately and in correct format, referencing any monitoring measurements taken to accepted published values to indicate conformance within accepted safety guidance limits for the procedures undertaken within the work practice		20	10	10			
	PC6. Communicate and provide information, advice and guidance effectively in the appropriate medium to meet the individuals needs and preferences		20	0	10			
	PC7. Report actual and potential risks from radiation, in context, to other healthcare professionals and where appropriate seek assistance and advice		10	5	5			
	PC8. Maintain full, accurate and legible records of information and store in correct location in line with current legislation, guidelines, policies and protocols		10	5	5			
	PC9. Confirm that all required procedures and associated safety measures are current and compliant with relevant legislation		20	5	15			

	PC10. Maintain full, accurate and legible records of information and store in correct location in line with current legislation, guidelines, local policies and protocols		20	10	10			
	TOTAL		**200**	**105**	**85**	**0**	**0**	
8. HSS/ N 9610 (Follow infection control policies and procedures)	PC1. Preform the standard precautions to prevent the spread of infection in accordance with organisation requirements	200	5	0	5			
	PC2. Preform the additional precautions when standard precautions alone may not be sufficient to prevent transmission of infection		5	0	5			
	PC3. Minimise contamination of materials, equipment and instruments by aerosols and splatter		5	5	0			
	PC4. Identify infection risks and implement an appropriate response within own role and responsibility		20	10	10			
	PC5. Document and report activities and tasks that put patients and/or other workers at risk		5	0	5			
	PC6. Respond appropriately to situations that pose an infection risk in accordance with the policies and procedures of the organization		5	0	5			
	PC7. Follow procedures for risk control and risk containment for specific risks		10	0	10			
	PC8. Follow protocols for care following exposure to blood or other body fluids as required		10	0	10			
	PC9. Place appropriate signs when and where appropriate		20	10	10			
	PC10. Remove spills in accordance with the policies and procedures of the organization		5	0	5			

	PC11. Maintain hand hygiene by washing hands before and after patient contact and/or after any activity likely to cause contamination		5	0	5			
	PC12. Follow hand washing procedures		5	0	5			
	PC13. Implement hand care procedures		5	0	5			
	PC14. Cover cuts and abrasions with water-proof dressings and change as necessary		5	5	0			
	PC15. Wear personal protective clothing and equipment that complies with Indian Standards, and is appropriate for the intended use		5	0	5			
	PC16. Change protective clothing and gowns/aprons daily, more frequently if soiled and where appropriate, after each patient contact		5	0	5			
	PC17. Demarcate and maintain clean and contaminated zones in all aspects of health care work		20	10	10			
	PC18. Confine records, materials and medicaments to a well-designated clean zone							
	PC19. Confine contaminated instruments and equipment to a well-designated contaminated zone							
	PC20. Wear appropriate personal protective clothing and equipment in accordance with occupational health and safety policies and procedures when handling waste		5	0	5			
	PC21. Separate waste at the point where it has been generated and dispose of into waste containers that are colour coded and identified		5	0	5			

	PC22. Store clinical or related waste in an area that is accessible only to authorised persons		5	5	0			
	PC23. Handle, package, label, store, transport and dispose of waste appropriately to minimise potential for contact with the waste and to reduce the risk to the environment from accidental release		5	0	5			
	PC24. Dispose of waste safely in accordance with policies and procedures of the organisation and legislative requirements		5	5	0			
	PC25. Wear personal protective clothing and equipment during cleaning procedures		5	0	5			
	PC26. Remove all dust, dirt and physical debris from work surfaces		5	0	5			
	PC27. Clean all work surfaces with a neutral detergent and warm water solution before and after each session or when visibly soiled		5	0	5			
	PC28. Decontaminate equipment requiring special processing in accordance with quality management systems to ensure full compliance with cleaning, disinfection and sterilisation protocols		5	0	5			
	PC29. Dry all work surfaces before and after use		5	0	5			
	PC30. Replace surface covers where applicable		5	0	5			
	PC31. Maintain and store cleaning equipment		5	5	0			
	TOTAL		**200**	**55**	**145**			
Grand Total-1 (Subject Domain)		400						

Assessment Form (To be filled by Assessor for Each Trainee)						
Job Role	X ray Technician	**Trainee Name**			**Batch**	
Qualification Pack	HSS/ Q 0701	**Taining Partner**	-	-		
Sector Skill Council		**Name of Assessor**				
Name & Signature of Representative & Stamp of Assessing Body:		-				
Theory (20% weightage)						
		Marks Alloted		**Marks Awarded by Assessor**		
Grand Total-1 (Subject Domain)		**80**				
Grand Total-2 (Soft Skills and Comunication)		**20**				
Grand Total-(Theory)		**100**				
Detailed Break Up of Marks		**Theory**				
Subject Domain		**Pick each NOS Compulsorily totalling 80**				
National Occupational Standards (NOS)	**Performance Criteria (PC)**	**Total Marks (80)**	**Marks Allocation**	**Marks Awarded by Assessor**	**Grand Total of Theory**	
			Theory	**Theory**		
1. HSS/ N 0711: Comprehend conventional radiological needs of patients	PC1. Explain the subdivisions of anatomy, terms of location and position,fundamental planes, vertebrate structure of man, organisation of the body cells and tissues	**15**				
	PC2. Explain the pathology of various systems: cardiovascular system, respiratory system, central nervous system, musculoskeletal system, GIT, GUT and reproductive system					

	PC3. Explain the pathology of radiation injury and malignancies				
	PC4. Understand specific requests of physicians with respect to the scans required				
	PC5. Take medical history of the patient and document it as required				
	PC6. Understand and interpret instructions and requirements documented by the physician in the patient's prescription				
	PC7. Determine the radiological diagnostic tests required for the patient based on the physician's prescription and the medical history				
	Total		15		
2.HSS/ N 0712: Prepare the patient and the room for the procedure	PC1. Prepare the room, apparatus and instruments for conventional radiological procedures like X-ray, BMD or Mammography	**15**			
	PC2. Set up the machine for the desired procedure				
	PC3. Position the patient correctly for an X-ray in the following positions: a. Erect b. Sitting c. Supine d. Prone e. Lateral f. Oblique g. Decubitus				
	PC4. Explain relative positions of X-ray tube and patient and the relevant exposure factors related to these				
	PC5. Explain the use of accessories such as Radiographic cones, grid and positioning aids				

	PC6. Explain the anatomic and physiological basis of the procedure to be undertaken				
	PC7. Explain the radiographic appearances of both normal and common abnormal conditions in order to ensure application of the appropriate radiographic technique				
	PC8. Apply modifications in positioning technique for various disabilities and types of subject				
	PC9. Explain the principles of radiation physics detection and measurement				
	PC10. Explain the biological effects of radiation				
	PC11.Explain the principles of radiation protection: Maximum permissible exposure concept b. Annual dose equivalent limits (ADEL) ALARA concept c. International recommendations and current code of practice for the protection of persons against ionising radiation from medical and dental use				
	PC12.Explain the use of protective materials: a. Lead b. Lead – impregnated substances c. Building materials d. Concept of barriers e. Lead equivalents and variations f. Design of X-ray tubes related to protection. g. Structural shielding design (work-load, use factor, occupancy factor, distance				
	PC13. Explain the instruments of radiation protection, use of gonad shield and practical methods for reducing radiation dose to the patient				

	PC14. Ensure protection of self, patients, departmental staff and public from radiation through use of protection instruments and monitoring personnel and the work area				
	Total		15		
3. HSS/ N 0713: Operate and oversee operation of conventional radiological equipment	PC1. Describe the construction and operation of general radiographic equipment	**10**			
	PC2. Reliably perform all non-contrast plain Radiography, and contrast radiography in special situations				
	PC3. Apply quality control procedures for all radiologic equipment				
	PC4. Control and manipulate parameters associated with exposure and processing to produce a required image of desirable quality				
	PC5. Practice the procedures employed in producing a radiographic image				
	PC6. Describe methods of measuring exposure and doses of radiographic beams				
	PC7. Discuss and apply radiation protection principles and codes of practice				
	PC8. Demonstrate an understanding of processing of images in digital form and be familiar with recent advances in imaging				
	PC9. Set up the X-ray machine for the procedure				
	PC10. Carry out routine procedures associated with maintenance of imaging and processing systems				

	PC11. Ensure protection of patients, departmental staff and public from radiation through use of protection instruments and monitoring personnel and the work area				
	Total		10		
4. HSS/ N 0714: Process X-ray films/ Images	PC1. Explain the principles of conventional radiographic imaging	**10**			
	PC2. Apply knowledge of conventional radiographic imaging to the production of radiographs and the assessment of image quality				
	PC3. Understand the construction and operation of image processing equipment				
	PC4. Control and manipulate parameters associated with exposure and processing to produce a required image of desirable quality				
	PC5. Perform X-ray film / image processing techniques (including dark room techniques)				
	PC6. Explain and implement the fundamentals, concepts and applications of processing of images in digital form using computer based systems				
	PC7. Carry out quality control for automatic film processing, evaluate and act on results				
	Total		10		
5.HSS/ N 0715: Prepare and document conventional radiological	PC1. Correctly identify anatomical features on the radiographs and identity some major pathological and traumatic conditions	**10**			
	PC2. Seek the advice of the Radiologist on conditions identified				

reports	PC3. Document the comments and diagnosis of the Radiologist in a report for the patient				
	PC4. Maintaining the patient record				
	Total		10		
HSS/ N 9614 : Recognize Healthy body systems	PC1. Correctly use and interpret the medical terminology that describes normal structure, function & location of major body systems	**5**			
	PC2. Correctly use and interpret the information that relates to the interrelationship between major components of each body system and other structure				
	PC3. Review the factors that contribute to maintain whole body health				
	PC4. Evaluate how relationship between different body systems affect and support healthy functioning				
	PC5. Enhance quality of work by using and sharing information about healthy functioning of the body				
	Total		5		
7. HSS/ N 9608: Follow radiation safety guidelines	PC1. Confirm sources of radiation and likely type of exposure for all individuals within the work area	**10**			
	PC2. Apply appropriate assessment methodology suitable for source, type of exposure, dose, level of risk and the recipients' exposure time				
	PC3. Confirm that all required procedures and associated safety measures are compliant with current and relevant legislation requirements				
	PC4. Determine and assess the appropriateness of the projected radiation dose over a suitable period of time for an individual or key staff and				

	other personnel				
	PC5. Record the results of the assessment accurately and in correct format, referencing any monitoring measurements taken to accepted published values to indicate conformance within accepted safety guidance limits for the procedures undertaken within the work practice				
	PC6. Communicate and provide information, advice and guidance effectively in the appropriate medium to meet the individuals needs and preferences				
	PC7. Report actual and potential risks from radiation, in context, to other healthcare professionals and where appropriate seek assistance and advice				
	PC8. Maintain full, accurate and legible records of information and store in correct location in line with current legislation, guidelines, policies and protocols				
	PC9. Confirm that all required procedures and associated safety measures are current and compliant with relevant legislation				
	PC10. Maintain full, accurate and legible records of information and store in correct location in line with current legislation, guidelines, local policies and protocols				
	Total		10		
8. HSS/ N 9610 (Follow infection control policies and procedures)	PC1. Preform the standard precautions to prevent the spread of infection in accordance with organisation requirements	**5**			
	PC2. Preform the additional precautions when standard				

	precautions alone may not be sufficient to prevent transmission of infection				
	PC3. Minimise contamination of materials, equipment and instruments by aerosols and splatter				
	PC4. Identify infection risks and implement an appropriate response within own role and responsibility				
	PC5. Document and report activities and tasks that put patients and/or other workers at risk				
	PC6. Respond appropriately to situations that pose an infection risk in accordance with the policies and procedures of the organization				
	PC7. Follow procedures for risk control and risk containment for specific risks				
	PC8. Follow protocols for care following exposure to blood or other body fluids as required				
	PC9. Place appropriate signs when and where appropriate				
	PC10. Remove spills in accordance with the policies and procedures of the organization				
	PC11. Maintain hand hygiene by washing hands before and after patient contact and/or after any activity likely to cause contamination				
	PC12. Follow hand washing procedures				
	PC13. Implement hand care procedures				
	PC14. Cover cuts and abrasions with water-proof dressings and change as necessary				

	PC15. Wear personal protective clothing and equipment that complies with Indian Standards, and is appropriate for the intended use				
	PC16. Change protective clothing and gowns/aprons daily, more frequently if soiled and where appropriate, after each patient contact				
	PC17. Demarcate and maintain clean and contaminated zones in all aspects of health care work				
	PC18. Confine records, materials and medicaments to a well-designated clean zone				
	PC19. Confine contaminated instruments and equipment to a well-designated contaminated zone				
	PC20. Wear appropriate personal protective clothing and equipment in accordance with occupational health and safety policies and procedures when handling waste				
	PC21. Separate waste at the point where it has been generated and dispose of into waste containers that are colour coded and identified				
	PC22. Store clinical or related waste in an area that is accessible only to authorised persons				
	PC23. Handle, package, label, store, transport and dispose of waste appropriately to minimise potential for contact with the waste and to reduce the risk to the environment from accidental release				
	PC24. Dispose of waste safely in accordance with policies and procedures of the organisation and legislative requirements				

	PC25. Wear personal protective clothing and equipment during cleaning procedures				
	PC26. Remove all dust, dirt and physical debris from work surfaces				
	PC27. Clean all work surfaces with a neutral detergent and warm water solution before and after each session or when visibly soiled				
	PC28. Decontaminate equipment requiring special processing in accordance with quality management systems to ensure full compliance with cleaning, disinfection and sterilisation protocols				
	PC29. Dry all work surfaces before and after use				
	PC30. Replace surface covers where applicable				
	PC31. Maintain and store cleaning equipment				
	Total		5		
Grand Total-1 (Subject Domain)		**80**	**80**		
Soft Skills and Communication		**Select each part each carrying 10 marks totalling 20**			
National Occupational Standards (NOS)	**Performance Criteria (PC)**	**Total Marks (20)**	**Marks Allocation**	**Marks Awarded by Assessor**	**Grand Total of Theory**
			Theory	**Theory**	
Part 1 (Pick one field randomly carrying 50 marks)					
1. Attitude					

HSS/ N 9603 (Act within the limits of one's competence and authority)	PC1. Adhere to legislation, protocols and guidelines relevant to one's role and field of practice	**3**	3		
	PC2. Work within organisational systems and requirements as appropriate to one's role				
	PC3. Recognise the boundary of one's role and responsibility and seek supervision when situations are beyond one's competence and authority				
	PC4. Maintain competence within one's role and field of practice				
	PC5. Use relevant research based protocols and guidelines as evidence to inform one's practice				
	PC6. Promote and demonstrate good practice as an individual and as a team member at all times				
	PC7. Identify and manage potential and actual risks to the quality and safety of practice				
	PC8. Evaluate and reflect on the quality of one's work and make continuing improvements				
	Total		3		
Attitude Total					
2. Work Management					
HSS/ N 9602 (Ensure availability of medical and diagnostic supplies)	PC1. Maintain adequate supplies of medical and diagnostic supplies	**4**	4		
	PC2. Arrive at actual demand as accurately as possible				
	PC3. Anticipate future demand based on internal, external and other contributing factors as accurately as possible				

	PC4. Handle situations of stock-outs or unavailability of stocks without compromising health needs of patients/ individuals				
	Total		4		
3. Etiquette					
HSS/ N 9601 (Collate and Communicate Health Information)	PC1. Respond to queries and information needs of all individuals	**3**	3		
	PC2. Communicate effectively with all individuals regardless of age, caste, gender, community or other characteristics				
	PC3. Communicate with individuals at a pace and level fitting their understanding, without using terminology unfamiliar to them				
	PC4. Utilise all training and information at one's disposal to provide relevant information to the individual				
	PC5. Confirm that the needs of the individual have been met				
	PC6. Adhere to guidelines provided by one's organisation or regulatory body relating to confidentiality				
	PC7. Respect the individual's need for privacy				
	PC8. Maintain any records required at the end of the interaction				
	Total		3		
Etiquette Total					
Part 2 (Pick one field as per NOS marked carrying 50 marks)					
1. Team Work (Evaluate with NOS: HSS/N/0304, 0305, 0306, 0307)					
2. Safety management (Evaluate with NOS: HSS/N/0301, 0302, 0303, 0409, 9610)					

HSS/ N 9606 (Maintain a safe, healthy, and secure working environment)	PC1. Identify individual responsibilities in relation to maintaining workplace health safety and security requirements	**3**	3		
	PC2. Comply with health, safety and security procedures for the workplace				
	PC3. Report any identified breaches in health, safety, and security procedures to the designated person				
	PC4. Identify potential hazards and breaches of safe work practices				
	PC5. Correct any hazards that individual can deal with safely, competently and within the limits of authority				
	PC6. Promptly and accurately report the hazards that individual is not allowed to deal with, to the relevant person and warn other people who may get affected				
	PC7. Follow the organisation's emergency procedures promptly, calmly, and efficiently				
	PC8. Identify and recommend opportunities for improving health, safety, and security to the designated person				
	PC9. Complete any health and safety records legibly and accurately				
	Total		3		
3. Waste Management (Evaluate with NOS: HSS/N/5105, 5108, 5114, 5115)					
HSS/ N 9609 (Follow biomedical waste disposal	PC1. Follow the appropriate procedures, policies and protocols for the method of collection and containment level according to the waste type	**5**	5		

protocols)	PC2. Apply appropriate health and safety measures and standard precautions for infection prevention and control and personal protective equipment relevant to the type and category of waste				
	PC3. Segregate the waste material from work areas in line with current legislation and organisational requirements				
	PC4. Segregation should happen at source with proper containment, by using different colour coded bins for different categories of waste				
	PC5. Check the accuracy of the labelling that identifies the type and content of waste				
	PC6. Confirm suitability of containers for any required course of action appropriate to the type of waste disposal				
	PC7. Check the waste has undergone the required processes to make it safe for transport and disposal				
	PC8. Transport the waste to the disposal site, taking into consideration its associated risks				
	PC9. Report and deal with spillages and contamination in accordance with current legislation and procedures				
	PC10. Maintain full, accurate and legible records of information and store in correct location in line with current legislation, guidelines, local policies and protocols				
	Total		5		
4. Quality Assurance					
HSS/ N 9611:	PC1. Conduct appropriate research and	2	2		

Monitor and assure quality	analysis				
	PC2. Evaluate potential solutions thoroughly				
	PC3. Participate in education programs which include current techniques, technology and trends pertaining to the dental industry				
	PC4. Read Dental hygiene, dental and medical publications related to quality consistently and thoroughly				
	PC5. Report any identified breaches in health, safety, and security procedures to the designated person				
	PC6. Identify and correct any hazards that he/she can deal with safely, competently and within the limits of his/her authority				
	PC7. Promptly and accurately report any hazards that he/she is not allowed to deal with to the relevant person and warn other people who may be affected				
	PC8. Follow the organisation's emergency procedures promptly, calmly, and efficiently				
	PC9. Identify and recommend opportunities for improving health, safety, and security to the designated person				
	PC10. Complete any health and safety records legibly and accurately				
Part 2 Total	**10**	2			
Grand Total-2 (Soft Skills and Communication)	**20**				