

NATIONAL REMOTE SENSING CENTRE
ADVERTISEMENT NO.NRSC/RMT/3/2017 DATED 20.05.2017
Name of the Post : Technician – B (Refrigeration & Air -Conditioning)
Post Code : TB 9

SYLLABUS – WRITTEN TEST

Type of Examination	:	Objective Type (Multiple Choice Questions)
No. of Questions	:	80 Questions
Apportionment of marks	:	Each Question carries one mark.
Duration of Examination	:	02 Hours

Qualification Requirement : ITI/NTC/NAC in Refrigeration & Air -Conditioning Trade.

(Examination will broadly comprise of below mentioned topics as covered in ITI/NTC/NAC in Refrigeration & Air –Conditioning Trade .)

1. Basics in Refrigeration – refrigeration cycle, basic components.
2. Fundamentals in electrical engineering
3. AC & DC motors including VFDs:
4. Different welding techniques
5. Types of refrigerators, air conditioners , Package units, Centralised industrial Air conditioning:
6. Direct expansion systems / In direct expansion AC systems.
7. Frost free refrigerators
8. Types of refrigerants/ Eco friendly refrigerants.
9. Automobile AC systems
10. Different parts of AC system: compressor, condenser, expansion valve and evaporator, ducts, cooling towers – Water treatment/de scaling measures.
11. Types of condensers – Water cooled and air cooled
12. Fundamentals of Water cooler/visible cooler & bottle cooler/deep freezer/ice cube machine/ice candy plant/ice cream plant and walk in cooler & reach in cabinet:
13. Cold storage type AC systems

Syllabus for Skill Test

1. Identification of gas welding equipments & accessories. Setting oxy-acetylene plant, lighting and adjustment of flame-simple joint on M.S. Preparing close fitting lap joints for both soldering/ brazing cu to cu, cu to MS. Importance of wetting and capillary action.
2. Identification of various Refrigeration equipments, components of vapour compression system like compressor, condenser, expansion valve and evaporator etc. Working on soft copper tubing like, cutting, bending, flaring, swaging, pinching, brazing.
3. Tracing Electrical circuit, checking and testing of electrical accessories like, thermostat, Timer, Defrost Heaters, Bi- metal etc., checking air distribution system, servicing of refrigerator, testing of components. Test the performance of refrigerator window AC unit / Split AC unit.
4. Dismantling of Hermetic compressors, Identification of components, Servicing, cutting gaskets, lapping and assembling of compressors used in refrigerators, window & split A.C, and assembling. Dismantling & assembling of Hermetic compressors like,

reciprocating, rotary, wobble, swash plate & scroll type compressors. Identify the parts and rectify the defects.

5. Cleaning, Flushing and servicing of air cooled condenser, leak testing of condenser. De scaling of air cooled condenser. Test and adjust expansion valves.
6. Servicing of evaporators in refrigerators, bottle cooler, water coolers, window and split A.C, Installation, Leak test, remove oil from evaporator, Flushing, Defrosting.
7. Finding DBT, WBT, RH & other properties by using psychometric chart. Use of psychometer. Servicing of Fans & blowers, motors, used in Air conditioning system. Servicing of Fans & blowers, motors, used in Air conditioning system.
8. Installation of ducts, construction of ducts, understanding Duct lay out drawings, selection of ducts, and insulation in ducts. Longitudinal and transverse joints.
9. Identifying various components, electrical circuits, testing components, fault detection, install gauge manifold in the system, leak testing, evacuation, gas charging, Installation, Trouble shooting. Identifying various components, fault detection, install gauge manifold in the system, leak testing, evacuation, gas charging, Installation, Trouble shooting in **Package units/ Centralised / industrial AC systems.**
10. Repair and maintenance of car AC system, servicing, testing magnetic clutch, leak testing, evacuation, gas charging, check air flow, measure temperature and pressure. Check solenoid valve. Repair and Preventive maintenance of different Commercial automobile units.