



श्री चित्रा तिरुनाल आयुर्विज्ञान और प्रौद्योगिकी संस्थान, त्रिवेंद्रम, तिरुवनन्तपुरम - 695 011, केरल, भारत
SREE CHITRA TIRUNAL INSTITUTE FOR MEDICAL SCIENCES AND TECHNOLOGY, TRIVANDRUM
THIRUVANANTHAPURAM - 695 011, KERALA, INDIA

(एक राष्ट्रीय महत्व का संस्थान, विज्ञान और प्रौद्योगिकी विभाग, भारत सरकार)
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P&A.II/434/JTA(MRAC)/SCTIMST/2021

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Syllabus for written test for selection to the post of Junior Technical Assistant (MRAC) -VOP

1. Introduction to Trade
2. Safety Precautions and Hazards : General Safety, First Aid, 5S, Power Failure, etc.,
3. Hand Tool : Types of fitting hand tools, power tools and precession measuring instruments, their specifications care and maintenance.
4. sheet metal : Types of sheet metal joints and their uses.
5. Riveted Joints : Riveting types their uses and applications.
6. Basic Electricity : Electrical terms and definitions, like voltage, current, resistance, power factor, and their measuring instrument.
7. Basic Electronics : Define Resister, Inductor, capacitor, impedance, reactance, Principle of semi-conductor and their types and material, Transistors configuration and application.
8. Motor : Working principle of AC/DC motors, Types of motors starts and their uses and application.
9. Welding : Commonly used welding process Welding T&E specification and their types.
10. Thermodynamic Principle : Thermodynamic law's refrigeration units and measurement.
11. Heat and Temperature : Define temperature, heat, types of heat.
12. Basic Refrigeration Principle : Refrigeration cycle (V/C) using Ph, Pv, Ts diagram.
13. Refrigerator : Types of Refrigerator, construction, service and maintenance.
14. Compressor : Testing of compressor.
15. Evaporator and Condenser : Importance of evaporator and condenser.
16. Reciprocating Compressor : Functions of reciprocating compressor.
17. Rotary and Scroll Compressor : Construction of rotary and scroll compressor and types.
18. Condenser : Types of condensers, cooling tower and water treatment.
19. Refrigeration Accessories :Function of drier, accumulator, heat exchanger, receiver, and oil Receiver.
20. Expansion Valve :Types of expansion valves, their functions and construction



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21. Evaporator : Working principle of evaporator, their types and methods of de- frosting.
22. Refrigerant : Classification of refrigerants, characteristics, chemical formula etc.,
23. Air Conditioner : Working principles and types of air conditioners.
24. Auto A/C : Automobile air conditioner, construction and function and service.
25. Psychrometric : Humidification and dehumidification process.
26. Direct and indirect refrigerant.
27. VRF/VRV systems.
28. AHU, FCU air washer, function and service.
29. Heat Load Calculation : Heat load calculation, comfort condition, psychrometric and its related.
30. Commercial Refrigeration : Types of commercial refrigeration equipment like water cooler, bottle cooler, deep freezer, cold room plant, ice cream, candy plant, reach in cooler and blast freezer/quick freezer.
31. Retrofit : Retrofitting procedure do's and dont's
32. Lubrication : Properties of lubricating oils and methods.


Administrative Officer Gr.I (i/c)
29/5/21