

CEPTAM 11: Detailed Syllabus for STA 'B' Tier- II CBT

Sr No.	Subject	Topic
1	Automobile Engineering	Solid Mechanics and Machine Design, Fluid and Thermal Engineering, Automobile Engineering I, Automobile Engineering II, Industrial and Production Engineering, Drawing and Modelling and relevant topic from subject
2	Chemical Engineering	Applied Mathematics, Material and Energy Balance, Chemical Engineering Thermodynamics, Chemical Technology, Chemical Reaction Engineering, Process Plant Utilities, Heat Transfer, Fluid Mechanics, Mass Transfer Operations, Material Science, Process Control and Instrumentation, Process Equipment Design and relevant topic from subject
3	Chemistry	Inorganic Chemistry, Organic Chemistry, Physical Chemistry, General Chemistry and relevant topic from subject
4	Civil Engineering	RCC Design, Steel Design, Concrete Technology, Construction Material, Building Construction, Structural Mechanics, Transportation Engineering, Surveying, RS & GIS, Quantity Surveying, Geo-Technical Engineering, Hydraulics, Water Resources Engineering, Environmental Studies, Public Health Engineering, Construction Management and relevant topic from subject
5	Computer Science and Engineering	Fundamentals of Computer/IT, Introduction to C Programming and Python, Data Structures and Algorithms, Database Management System and SQL Queries, Operating Systems, Software Engineering, Computer System Organisation, Computer Networks, Web Technologies, Object Oriented Programming, Digital Electronics/Switching Theory and Logical Devices and relevant topic from subject
6	Electrical & Electronics Engineering	Electrical Machine, Generation, Transmission and Distribution of Electrical Power, Electrical Circuit and Analysis, Electronics Component and Device, Digital Electronics, Microcontroller Microprocessor And Peripheral devices, Control System, Electrical and Electronics Instrumentation and Measurement, Industrial Electronics and Control, Electrical and Electronics Engineering Materials, Maintenance and Repair of Electrical & Electronics Equipment, Advanced Topics and relevant topic from subject
7	Electrical Engineering	Electrical and Electronics Materials, Electricity and Magnetism, Electrical Engineering Drawing, Estimation & Costing, Electrical Circuit Analysis, Electrical Machines, Electrical Power Engineering, Instrumentation & Control Engineering and Electronics & Micro Processor and

		relevant topic from subject
8	Electronics Engineering or Electronics & Communication Engineering or Electronics & Telecommunication Engineering	Applied Mathematics, Electronic Components and Devices, RF and Microwave Engineering, Digital Electronics, Electronic Devices and Circuits, Microprocessor And Peripheral devices, Electronics Instrumentation and Measurement, C Programming, Wireless and Mobile Communication System, Control Systems, Optical Fibre and Satellite Communication, Principles of Analog and Digital Communication, Microcontrollers and Embedded System and relevant topic from subject
9	Geology	General Geology, Geomorphology, Structural Geology and Petrology, Engineering Geology , Hydro Geology, Remote sensing and GIS and relevant topic from subject
10	Instrumentation Engineering	Applied Mathematics, Electronic Components and Devices, Digital Electronics, Electronics Instrumentation and Measurement, Transducers, Display and Recorders, Magnetic Circuits and Electrical Machines, Electronic Devices and Circuits, Microprocessor (8085) and Microcontroller (8051), Programming in C Language, Industrial and Process Control, Control System, Process Instrumentation and relevant topic from subject
11	Instrumentation & Electronics Engineering	Applied Mathematics, Electronic Components and Devices, Digital Electronics, Electronics Instrumentation and Measurement, Control System, Magnetic Circuits and Electrical Machines, Electronic Devices and Circuits, Microprocessor (8085) and Peripheral devices, Programming in C Language, Signal Transmission Recording and Display, Transducer & Application, Process Instrumentation and relevant topic from subject
12	Library Science	Library, Information and Society, ICT Fundamentals, Information Sources, Knowledge organisation, Scholarly Communication, Management of Library and Information Centre, Information Products and services, ICT in libraries, Ethics and relevant topic from subject
13	Mathematics	Algebra and Linear Algebra, Vector Analysis, Calculus, Real Analysis, Complex Analysis, Differential Equations, Numerical methods, Statistics and Probability Theory, 3-dimensional Coordinate Geometry, Operations Research and Basics of Computer Programming and relevant topic from subject
14	Mechanical Engineering	Applied Mathematics, Engineering Drawing and CAD/CAM/CIM, Solid Mechanics and Machine Design, Fluid Mechanics and Hydraulic Machines, Thermal and Heat Transfer and Refrigeration & Air-conditioning, IC Engines, Engineering materials, Production Engineering and Industrial Engineering and relevant topic from subject

15	Metallurgical Engineering	Engineering Mathematics, Engineering Drawing and Introduction to Computers, Thermodynamics, Heat and Mass Transfer, Material Science, Corrosion and Surface Engineering, Extractive Metallurgy, Material Testing and Characterisation, Physical Metallurgy, Mechanical Metallurgy, Workshop Technology, Manufacturing Processes and Industrial Management, Heat Treatment Processes, Furnaces and Refractory and relevant topic from subject
16	Physics	Mechanics, Waves and Optics, Electricity and Magnetism, Heat and Thermodynamics, Modern Physics, Solid State Physics and Electronics, Mathematical Physics and relevant topic from subject
17	Psychology	Introduction and Historical development, Schools of Psychology, Biopsychology, Cognitive and Sensory Processes, Statistical Method for Psychological Research, Research, Personality, Intelligence, Stress, Test/ Scale Construction, Social Psychology, Psychological Disorders, Development Psychology, Organizational Behaviour, Counseling Psychology and relevant topic from subject

CEPTAM 11: Detailed Syllabus for Tech 'A' Tier- II CBT

Sr No.	Subject/Trade	Topics
1	Book Binder	History and Background of Books, Book Binding, Physical understanding of books and magazines, Planning of Binding, Finishing and Enhancement, Various processes for Book binding methods, handling and care of different binding materials, Preparation of Binding Adhesives and it's uses, Binding Room Machinery, Tools & Equipment, Types of Book Binding and their Methods, Book Binding Steps, Forwarding and Finishing operations, Book Restoration, Repairing and Preservation Methods, Workshop Calculations, Automation in binding, Quality Consciousness and Tools and relevant topic from subject/trade
2	Carpenter	Introduction to Trade, Occupational Safety and Energy Conservation, Measurement and Marking Tool and it's applications, Common Tools and Equipments and their applications and materials, Timbers, Conversion and Sawing of Timber, Advance Wood Working and Finishing, Carpentry Joints, Adhesives and Fasteners, Pattern Making, Sheet Metal Work, Improved Timber, Furniture and Carpentry Building Works, Workshop Calculations,

		Basic Science, Engineering Drawing and Projection, Symbolic Representation and Free Hand Sketching and and relevant topic from subject/trade
3	CNC Operator	Introduction to Trade, Occupational Safety , Trouble Shooting of CNC Machines and Energy Conservation, Conventional Machine Tools, Engineering Drawing and Basic Concept of GD&T, Inspection of CNC manufactured components, Introduction to CNC Machines, Cutting Tools, Jigs & Fixtures, CNC Turning part Programming, VMC machine:-Operations & Programming, Multi Axis Machines and relevant topic from subject/trade
4	COPA	Fundamental of Computers and Hardware Basics, Software Installation and Windows Operating System, Introduction to DOS Command Line Interface & Linux Operating System, Networking Concepts, MS- Word Processing, Spread Sheet Application and Advanced MS-Excel, MS-Power Point presentation, Internet Concepts, Database management using MySQL, e-Commerce, Cyber Security, Web Designing Concepts, Introduction to Cloud Computing, Programming Concepts and Developments and relevant topic from subject/trade
5	Draughtsman (Mechanical)	Basic Safety and importance of trade, Basic Drawing Instruments, Basic Geometrical Shapes, Dimensioning, Projections, Interpenetration of Shapes, Development of surfaces, Isometric projections and drawings, Fasteners and their Applications, Power Transmission, Engineering Scales, Bearing, Hangers and Brackets, Fundamental of Computers and Hardware Basics, CAD-2D, CAD-3D and relevant topic from subject/trade
6	Electrician	Basics, Fuse and Relays, Cells and Batteries, Machines and Motors, Alternating current, Transformers, Wiring Systems, Electrical Measuring Instruments, Lighting, Basic Electronics and Digital Electronics, Power generation, Transmission and Distribution and relevant topic from subject/trade
7	Electronics	Basics of Electronics and Electrical Fundamentals, Power Electronics, Opto-Electronics, Sensor and Transducers, Communication, Amplifiers and Oscillators, Digital Electronics, LED Lights and Solar Power, Electronic Gadgets and relevant topic from subject/trade
8	Fitter	Marking, Tools and Measurements, Material (Iron, Steel and other metals), Drilling, Instruments, Bearings, Lathe and other processes, Nut and Bolts, Pipes and Pipefitting, Welding, Power Transmission, Lubricants and Lubrication, Pneumatics and hydraulics and relevant topic from subject/trade

9	Machinist	Workshop Safety, Tools Fundamentals, Measurement and Marking Tool and it's applications, Drilling Machine and Slotting Machine, Types of Keys , Jigs and Fixtures, Lathe Machine, Maintenance of Machine, Coolant and Lubricant, Milling Machines & Indexing heads, Metals and Heat Treatment, Grinding Machine, Gauges, Gears, CNC Lathe, Vertical Machining Center, Engineering Drawing and relevant topic from subject/trade
10	Mechanic (Motor Vehicle)	Introduction to Trade, Occupational Safety and Energy Conservation, System of Measurements, Tools and Equipment, Basic Electricity and Electronics, Vehicle Systems and Components, Heat treatment, Welding, Non-destructive testing, Introduction to Hydraulics & Pneumatics, Auto Industry and Introduction to Engines and components, Intake and Exhaust System, Diesel & Petrol Fuel System, Components, Electronic Diesel & Petrol Control, Types of Emission and Emission Control, Workshop Calculations, Basic Science, Advance technologies in Automobile, Maintenance and Troubleshooting and relevant topic from subject/trade
11	Optical Worker	Light and it's properties, Different types of lens and mirror with properties, Material of Lenses, Refraction through Prism, Optical Fabrication, Processing materials, Thin film coating & Photochromatic glasses, LASER and Telescope, Quality of optical lens, Measurement of Lens parameters, Quality control, Physical and Geometrical optics and relevant topic from subject/trade
12	Phototgrapher	Photography and its history, Basics of photography, Basics of shooting, Computer Fundamental, Basics of Lens, Aperture and Exposure, Image editing, Videography, Light and its principles, Video and Audio productions, Post Production and relevant topic from subject/trade
13	Sheet Metal Worker	Introduction & Workshop Safety, Engineering Drawing, Computer Skills, Quality, Workshop Calculation, Tools, Paint, Welding and Soldering, Folding and Joints, Sheet Metal Operation, Metals and Non- Metals and relevant topic from subject/trade
14	Surveyor	Introduction of Surveying and Safety, Plain Geometrical Figures, Scales, Signs and Symbols, Chain Surveying, Workshop calculation & Science, Compass Surveying, Plane table Surveying, Theodolite Surveying, Levelling, Road Project, Tacheometric survey, Curves, Total Station, Contouring, Topographical Survey, Auto CAD, GPS/DGPS, Hydrographic survey, Railway Line Survey, Estimation and relevant topic from subject/trade
15	Turner	Introduction to Trade, Occupational Safety and Energy Conservation, System of Measurements, Tools and

		Equipment, Lubricant and Coolant, Limit, Fit and Tolerance, Lathe, Jigs & Fixtures and Surface Finish, Screw Threads, Taper Turning and Gauges, Welding, Grinding and Abrasives, CNC Machines and Automation and Quality Tools, Basic Science, Heat treatment, Non-destructive testing, Workshop Calculations, Engineering Drawing, Projection, Symbolic Representation and Free Hand Sketching and relevant topic from subject/trade
16	Welder	Introduction to Trade, Occupational/Workshop Safety and Energy Conservation, System of Measurements, Common Tools and Equipment in Welding Workshop, Metal Joining Methods, Heat treatment, Workshop Calculations, Basic Science, Electric Arc Welding, CO ₂ Welding, TIG Welding, MIG Welding, Gas welding and cutting, Inspection method and cost estimation, Advanced welding process, Weld joints and symbols, Properties of Metals, Projection, Symbolic Representation and Free Hand Sketching, Engineering Drawing and relevant topic from subject/trade