

General Awareness syllabus

Indicative Syllabus:

World History and Geography and India History and Geography Important Historical Events:

Ancient Indian History, Medieval Indian History, Modern Indian History – Colonial Period, Independence Movement, Post-Independence, Modern World History.

Physical, Economic, and Human Geography of India, Physical and Economic Geography of the World.

Constitution and Legal Knowledge and Environment:

Fundamentals of Indian Constitution, Union and State Governments, Parliament, Judiciary, Local Governance, Ecology and Environment-Conservation, Pollution and Climate Change, Disaster Management.

Madhya Pradesh General Knowledge:

Madhya Pradesh: Geography, History, Culture and Economy.

Current Affairs:

Current Affairs: Government Schemes, Economic Development, Current Polity and Governance, Current Events, etc. of National and World importance.

Information Technology:

Basic Knowledge of IT i.e. Working Knowledge of Internet, MS Office, Computer Awareness, Basic hardware Knowledge etc.

General Mathematics and logical reasoning

Name of the Post: Junior Engineer/Assistant Manager – (Civil) Trainee

Indicative Syllabus:

1. Advanced Construction Technology
2. Building Construction
3. Concrete Technology
4. Construction Management
5. Construction Materials
6. Design of Steel and RCC Structure
7. Environmental Science
8. Estimating and Costing
9. Geo Technical Engineering - Soil Mechanics
10. Hydraulics
11. Mechanics of Materials
12. Pavement Design and Maintenance
13. Surveying
14. Theory of Structure
15. Traffic Engineering
16. Transportation Engineering
17. Water Resource Engineering- irrigation
18. Public Health Engineering

Note: The above syllabus is indicative in nature and candidates are advised to cover all the topics under academic curriculum of essential qualification of the post for Online Examination (CBT).

Name of the Post: ANM

Indicative Syllabus:

1. Determinants of health and overview of health problems of communities in India.
2. Organization of SC, PHC, CHC and district hospital
3. Role and Responsibilities of ANM\FHW and code of ethics for ANM.
4. Nutrition.
5. The Human body Structure and body systems and their functions.
6. Concept of mental health and Control and prevention of communicable diseases, General measures.
7. Communicable diseases.
8. Care of the sick in the community.
9. Need of First Aid and Minor Injuries and ailments, Cuts and wounds.
10. Factors affecting growth and development, Physical psychological and social development, Exclusive Breast feeding.
11. Infants and children, Adolescent health, School health.
12. Pregnancy.

Note: The above syllabus is indicative in nature and candidates are advised to cover all the topics under academic curriculum of essential qualification of the post for Online Examination (CBT).

Name of the Post: Assistant Law Officer/ Law Assistant Trainee

Indicative Syllabus:

1. Company Law
2. Contract Act-1872
3. Constitutional Law
4. Code of Civil Procedure-1908
5. Limitation Act-1993
6. Specific Relief Act
7. The Insolvency and Bankruptcy Code-2016
8. Negotiable Instruments Act-1881
9. Law of Partnership
10. Transfer of Property Act-1882
11. Registration Act-1908
12. Right to Information Act-2005
13. Labour Laws
14. Bharatiya Sakshya Adhinyam-2023
15. The Bharatiya Nyaya Sanhita-2023
16. The Bharatiya Nagarik Suraksha Sanhita-2023
17. Administrative Law
18. Principles of Statutory Interpretation
19. Arbitration and Conciliation act 1996
20. MP Land Revenue Code and Accomodation Act
21. Electricity Act 2003

Note: The above syllabus is indicative in nature and candidates are advised to cover all the topics under academic curriculum of essential qualification of the post for Online Examination (CBT).

Name of the Post: Assistant Manager (HR) Trainee

Indicative Syllabus:

1. Human Resource Management
2. Human Resource Development
3. Organizational Behavior
4. Organizational Development
5. Change Management
6. Team Dynamics at work
7. Business Communication
8. Human resource metrics and analytics
9. Cross cultural management
10. HR planning and Audit
11. Recruitment and Selection
12. Training and Development
13. Industrial Relations
14. Labour Laws and Employee relations
15. Compensations and Benefits management
16. Performance management system
17. Strategic HRM
18. International HRM

Note: The above syllabus is indicative in nature and candidates are advised to cover all the topics under academic curriculum of essential qualification of the post for Online Examination (CBT).

Name of the Post: Assistant Manager-IT Trainee

Indicative Syllabus:

1. Programming and Data Structure
2. Design and Analysis of Algorithms
3. Operating Systems
4. Database Management Systems
5. Computer Networks
6. Digital Logic
7. Computer Organization
8. Theory of Computation
9. Compiler Design

Note: The above syllabus is indicative in nature and candidates are advised to cover all the topics under academic curriculum of essential qualification of the post for Online Examination (CBT).

Name of the Post: Civil Attendant Trainee

Indicative Syllabus:

1. Safety
2. Carpenter Works
3. Brick Masonry
4. R.C.C. Construction
5. Layout Marking and Levelling
6. Drainage
7. Sanitary Fittings
8. Masonry Work
9. Finishing Work

Note: The above syllabus is indicative in nature and candidates are advised to cover all the topics under academic curriculum of essential qualification of the post for Online Examination (CBT).

Name of the Post: ECG Technician

Indicative Syllabus:

1. ECG- Basics
2. Electrographic leads and Electrophysiology
3. Calibration of ECG machine
4. Normal ECG
5. Sinus Rhythm
6. Conduction defects
7. Changes in myocardial infarction on ECG
8. Stress test
9. Holter studies (ambulatory ECG)

Note: The above syllabus is indicative in nature and candidates are advised to cover all the topics under academic curriculum of essential qualification of the post for Online Examination (CBT).

Name of the Post: Junior Engineer Plant Electronics Trainee

Indicative Syllabus:

1. Fundamentals of Electrical Engineering
2. Electrical Circuits
3. Basic Electronics
4. Control System and PLC
5. Digital Circuits
6. Communication Systems
7. Microcontroller and Applications
8. Linear Integrated Circuits
9. Electronics Measurements and Instrumentation

Note: The above syllabus is indicative in nature and candidates are advised to cover all the topics under academic curriculum of essential qualification of the post for Online Examination (CBT).

Name of the Post: Junior Engineer/Assistant Manager – Electrical (Distribution/Transmission/Plant) Trainee

Indicative Syllabus:

1. Fundamentals of Electrical Engineering
2. Electrical Circuits
3. Electrical Machines
4. Power System : Operations & Protection
5. Electrical Estimation and Costing
6. Utilization of Electrical Energy
7. Power Electronics
8. Electrical Engineering Materials
9. Basic Electronics
10. Measurements and Instrumentation
11. Energy Conservation and Audit
12. Generation, transmission and Distribution
13. Present Energy Scenario

Note: The above syllabus is indicative in nature and candidates are advised to cover all the topics under academic curriculum of essential qualification of the post for Online Examination (CBT).

Name of the Post: Junior Engineer-Plant (Mechanical) Trainee

Indicative Syllabus:

1. Applied Mechanics
2. Strength Of Materials
3. Thermal Engineering
4. Fluid Mechanics and Machinery
5. Theory of Machines
6. Manufacturing Technology
7. Mechanical Engineering Materials
8. Overview of Metrology and Linear Measurement

Note: The above syllabus is indicative in nature and candidates are advised to cover all the topics under academic curriculum of essential qualification of the post for Online Examination (CBT).

Name of the Post: LAB TECHNICIAN

Indicative Syllabus:

1. Fundamentals of Physiology
2. Basics of Biochemistry
3. Hematology & Clinical Pathology
4. General Microbiology
5. Clinical Biochemistry
6. Histopathology & Cytology
7. Immunology, Serology & Parasitology
8. Coagulation studies & Blood Bank procedures

Note: The above syllabus is indicative in nature and candidates are advised to cover all the topics under academic curriculum of essential qualification of the post for Online Examination (CBT).

Name of the Post: Line Attendant (Distribution) Trainee

Indicative Syllabus:

1. Engineering Drawing
2. Workshop calculation and science
3. DC Machines
4. Earthing
5. Measurement and Instrumentation
6. Electrical Components
7. Wiring
8. Induction Motors
- 9. Cables**

Note: The above syllabus is indicative in nature and candidates are advised to cover all the topics under academic curriculum of essential qualification of the post for Online Examination (CBT).

Name of the Post: Pharmacist

Indicative Syllabus:

1. Pharmaceutics
2. Pharmacology
3. Pharmaceutical Chemistry
4. Pharmacognosy
5. Applied Basic Sciences
6. Health education and community Pharmacy
7. Pharmaceutical jurisprudence
8. Drug store and business management
9. Hospital and clinical pharmacy

Note: The above syllabus is indicative in nature and candidates are advised to cover all the topics under academic curriculum of essential qualification of the post for Online Examination (CBT).

Indicative Syllabus

Name of Post	Plant Assistant - Electrical
---------------------	------------------------------

So No.	Trade Theory
1	Various safety measures involved in the Industry. Elementary first Aid. Concept of Standard.
2	Identification of Trade –Hand tools and their specifications.
3	Electron theory – free electron. Fundamentals of electricity. definitions, units & effects of electric current.
4	Explanation definition and properties of conductors, insulators and semiconductors. Types of wires and cables. standard wire gauge. classification of wires and cable insulations & voltage grades. Precautions in using various types of cables.
5	Techniques of soldering .Types of Solders and flux .
6	Ohm's Law ;Simple electrical circuits and problems. Kirchhoff's Laws and application . Series and parallel circuits. Open and short circuits in series and parallel networks. Law of resistance and various types of resistor.Effect of variation of tempeture on resistsnce.Different methods of measuring the values of resistance.series and parallel combinations of resistors.
7	Chemical effect of electric current and Laws of electrolysis. Explanation of anodes and cathodes. Lead acid cell; Principle of operation and components.Types of battery charging,safety precautions,test equipment.
8	Rechargeable dry cells,description, advantages and disadvantages, care and maintenance of cells. Grouping of cells for specified voltage and current.
9	Lead acid cells general defects remedies. Nickel Alkaline cells description charging power and capacity of cells. Efficiency of cell. Principle and operation of solar cell .
10	Magnetism – classification of Magnets, methods of Magnetizing, magnetic Materials. Properties, care & Maintenance, method of magnetizing magnetic material. Para & Diamagnetism and Ferro material. Principle Of electro – magnetism, Maxwell's corkscrew rule, Fleming left & right hand rules, magnetism field of loop & solenoid. MMF , flux density, Reluctance. B.H. curve, Hysteresis, eddy current. Principal of electro- magnetic induction , faraday law, lenz's law. Electrostatics – capacitor ,different types, functions ,grouping and uses.
11	Resistance - different types of resistors used in electrical ckts. Specification of resistance and tolerance. Effect of variation of temperature on resistance. Different method of measuring the value of resistance.
12	Working principal and circuits of common domestic equipments & appliances.

Indicative Syllabus

Name of Post	Plant Assistant - Electrical
---------------------	------------------------------

13	<p>D.C. Machines – general concept of electrical machines.</p> <p>Principal of D.C.generator</p> <p>Use of armature, field coil, yoke, and commutator, slip ring and brushes laminated core. Explanation of D.C. Generators – types – parts.</p> <p>E.M.F. equation. Self excited and separately excited Generators –practical uses.</p> <p>Brief description of series, shunt and compound generators and their application.</p>
14	<p>Explanation Of armature reaction, interlopes and their uses ,</p> <p>Connection of interlopes,communication</p>
15	<p>DC Motors – terms used in D.C. motor ,torque, speed, Back- e.m.f. etc. there relations practical application. Related problems.</p>
16	<p>Types , characteristic and practical application of D.C. motors. Special precaution to be taken in DC Series motors. Starters used in d.c.motors.</p>
17	<p>Types of speed control of DC motors in industry Word Leonard control, Thyristor/electronic controls.</p>
18	<p>Insulating materials- classifications, properties of common insulating materials.</p>
19	<p>Electric Wirings, importance, IEE rules. Types of wirings both domestic & industrial Specifications for wiring Grading of cables and current ratings.</p> <p>Principle of laying out in domestic wiring testing by meager.</p>
20	<p>Earthing- Principle of different methods of earthing. Plate earthing and Pipe earthing methods and IEE regulations. Importance of Earthing.</p> <p>-Earth Leakage Relay.</p>
21	<p>Alternating Current- Comparison D.C & A.C.,</p> <p>Advantages of A.C. Alternating current & related terms frequency Instantaneous value, R.M.S. value .Average value, Peak factor, form factor.</p> <p>Generation of sine wave,phase and phase difference. Inductive & Capacitive reactance X_L & X_C, Impedance (Z) , power factor,(P.f);Vector diagram. Active and Reactive power, Simple problems on A.C. circuits, single phase & three-phase system etc.</p> <p>Problems on A.C. ckts1. Both series & parallel power consumption P.F. etc.</p> <p>Concept three – phase Star & Delta connection Line voltage, current & power in a 3 ph ckt, with Balanced and unbalanced load.</p>

Indicative Syllabus

Name of Post	Plant Assistant - Electrical
---------------------	------------------------------

22	<p>TRANSFORMERS Working principal, construction and classification of transformer. Single phase and three phase transfer turn ratio and EMF equation, rating of transformer. Series and Parallel operation of Transformer. Voltage regulation and efficiency. Auto transformer and instrument transformer (CT & PT). Protective devices. Specifications, simple problems on e.m.f. Equation, turn ratio, regulations and efficiency. Special transformers. Transformer – construction cores winding shielding, auxiliary parts breather, conservator, buchholz relay, other protective devices, cooling of transformer .Transformer oil tasting. Tap changer off load and on load. Transformer bushings and termination.</p>
23	<p>ALTERNATO- Principle of alternator, E.M.F.equation, relation between poles, speed and frequency. Types and construction of alternator. Prime mover, regulation, phases sequence and parallel operation of alternators and brushless alternator.Effect of changing the field excitation and power factor correction.</p>
24	<p>Electrical measuring Instruments- Classification of electrical instrument and essential forces required in indicating instrument PMMC and moving iron instrument. Measurement of various electrical parameters using different analog and digital instruments. Measurements of energy in three phase circuit. Automatic meter reading infrastructures and smart meter. Digital CRO. Phase sequence indicator. Extension of range and calibration of measuring instruments.</p>
25	<p>Laws of illuminations. Types of illuminations system. Illumination factors, intensity of light. Types of lamps. Advantage/ disadvantage and there application. (Neon sign, halogen, mercury vapour, sodium vapour, fluorescent tube CFL, solar lamp). Types of lighting. Decoration lighting drum switches, direct & indirect lighting.Efficiency in lumens per watt, colour available. thumb rule calculation of lumens. Estimating placement of lights and fans and ratings.</p>
26	<p>D.C. m/c winding, Pole pitch ,coil pitch ,back pitch ,front pitch Lap & wave winding Progressive and retrogressive winding.</p>
27	<p>SYNCHRONOUS MOTOR- Working principle effect of change of excitation and load. Application in industry in power factor improvement.</p>

Indicative Syllabus

Name of Post	Plant Assistant - Electrical
---------------------	------------------------------

28	Induction motor Working principle Squirrel Cage Induction motor, Slip ring induction motor. Construction and characteristics starting and speed control. D.O.L Starter, Star /Delta starter, Autotransformer starter. Single phase induction motor- Working principle different method of starting and running (Capacitor start/Capacitor run shaded pole technique). FHP motor.
29	A.C. m/c Winding – Concentric/ distributed, single/ double layer winding and related terms.
30	Universal motor- Working principal advantage, application in domestic appliances and industry .Characteristic, fault location and rectification.
31	Converter-inverter, M.G.Set-description- Characteristics, specifications-running and maintenance.
32	Techniques, procedures of Layout of conduit wiring as per I.S-732-1963. Use of flame proof and explosion of P.V.C conduct switches.
33	Power generation by thermal and hydel power plants, power generation by Solar and wind energy. Corona, Lightning arrestor, Horn gap.
34	Fuse/cut out /kit Kat-function, characteristics and materials. H.R.C Fuses- application. Contactors- Miniature circuit breakers. Relays- thermal, Electromagnetic, solid state relays, Control Relays and protective Relays.
35	Introduction to Basic electronics- Semiconductor energy level, atomic structure 'P' & 'N' type of materials.P-N junction. Diodes- classification of Diodes- Reversed Bias and Forward Bias, Heat sink, Specification of Diode and rating.Rectifiers and filters.
36	Explanation and principal of working of a transistor- types of transistors, Characters of a transistors. Biasing and use of transistors. Specification and rating of transistors.
37	Amplifiers, Amplifiers. - class A,B & C power amplifier. working principal Explanation of stages and types. Multivibrator – applications.
38	Explanation and working principle and practical applications of U.J.T.,F.E.T., S.C.R Diac, Triac, power MOSFET, G.t.O & I.G.B.T.
39	D.C/A.C Power control using power transistor, thyristor. Voltage stabilizer, U.P.S. DC/AC motor drives using transistor/ thyristor.
40	Power Supply Stabilizer,Ferro resistant circuit. DC/AC motor drives using Thyristor/Transistor control.

Indicative Syllabus

Name of Post	Plant Assistant - Electrical
---------------------	------------------------------

41	Complete House- Wiring layout. Circuit splitting load wire I.E.E Rules. Multistoried system. Fault finding and trouble shooting of domestic electrical appliances.
42	Decorative lighting Fault finding techniques in Decoration lighting.

Note: The above syllabus is indicative in nature and candidates are advised to cover all the topics under academic curriculum of essential qualification of the post for Online Examination (CBT).

Indicative Syllabus

Name of Post	Plant Assistant - Mechanical
---------------------	------------------------------

So No.	Trade Theory
1	<p>Importance of safety and general precautions observed in the in the industry/shop floor. All necessary guidance to be provided to the new comers to become familiar with the working of Industrial Training Institute system including stores procedures. Soft Skills: its importance and Job area after completion of training. Introduction of First aid. Operation of electrical maintenance. Introduction of PPEs. Introduction to 5S concept & its application.</p> <p>Response to emergencies eg; power failure, fire, and system failure.</p>
2	<p>Linear measurements- its units, dividers, calipers, hermaphrodite, centre punch, dot punch, their description and uses of different types of hammers. Description, use and care of „V“ Blocks, marking off table.</p>
3	<p>Bench vice construction, types, uses, care & maintenance, vice clamps, hacksaw frames and blades, specification, description, types and their uses, method of using hacksaws.</p> <p>Files- specifications, description, materials, grades, cuts, file elements, uses. Measuring standards (English, Metric Units), angular measurements, subdivisions, try square, ordinary depth gauge, protractor- description, uses and cares.</p>
4	<p>Marking off and layout tools, dividers, scribing block, odd leg calipers, punches- description, classification, material, care & maintenance.</p>
5	<p>Calipers- types, material, constructional details, uses, care & maintenance of cold chisels- materials, types, cutting angles.</p>
6	<p>Marking media, marking blue, Prussian blue, red lead, chalk and their special application, description. Use, care and maintenance of scribing block.</p>
7	<p>Surface plate and auxiliary marking equipment, „V“ block, angle plates, parallel block, description, types and uses, workshop surface plate- their uses, accuracy, care and maintenance.</p> <p>Types of files- convexing, taper, needle, care and maintenance of files, various types of keys, allowable clearances & tapers, types, uses of key pullers.</p>
8	<p>Physical properties of engineering metal: colour, weight, structure, and conductivity, magnetic, fusibility, specific gravity.</p> <p>Mechanical properties: ductility, malleability hardness, brittleness, toughness, tenacity, and elasticity.</p>
9	<p>Power Saw ,band saw, Circular saw machines used for metal sections cutting</p>

Indicative Syllabus

Name of Post	Plant Assistant - Mechanical
---------------------	------------------------------

10	Micrometer- outside and inside – principle, constructional features, parts graduation, leading, use and care. Micrometer depth gauge, parts, graduation, leading, use and care. Digital micrometer.
11	Vernier calipers, principle, construction, graduations, reading, use and care. Vernier bevel protractor, construction, graduations, reading, use and care, dial Vernier Caliper, Digital Vernier caliper.
12	Drilling processes: common type (bench type, pillar type, radial type), gang and multiple drilling machine. Determination of tap drill size.
13	Metallurgical and metal working processes such as Heat treatment, various heat treatment methods -normalizing, annealing, hardening, case hardening and tempering. Power hammer – construction, features, method of operating and uses.
14	Marking and measuring tools, wing compass, Prick punch, tinman’s square tools, snips, types and uses. Tin man’s hammers and mallets type-sheet metal tools, Soldering iron, types, specifications, uses. Trammel- description, parts, uses. Hand grooves- specifications and uses.
15	Stakes-bench types, parts, their uses. Various types of metal joints, their selection and application, tolerance for various joints, their selection & application. Wired edges -
16	Solders-composition of various types of solders, and their heating media of soldering iron, fluxes types, selection and application-joints
17	Rivets-Tin man’s rivets types, sizes, and selection for various works. Riveting tools, dolly snaps description and uses. Method of riveting, shearing machine- description, parts and uses.
18	Hand tools: Hammers, welding description, types and uses, description, principle, method of operating, carbon dioxide welding. H.P. welding equipment: description, principle, method of operating L.P. welding equipment: description, principle, method of operating. Types of Joints-Butt and fillet as per BIS SP: 46-1988 specifications. Gases and gas cylinder description, kinds, main difference and uses.
19	Setting up parameters for arc welding machines-selection of Welding electrodes
20	Oxygen acetylene cutting-machine description, parts, uses, method of handling, cutting torch- description, parts, function and uses.
21	Drill- material, types, (Taper shank, straight shank) parts and sizes. Drill angle-cutting angle for different materials, cutting speed feed. R.P.M. for different materials. Drill holding devices- material, construction and their uses.

Indicative Syllabus

Name of Post	Plant Assistant - Mechanical
---------------------	------------------------------

22	Counter sink, counter bore and spot facing-tools and nomenclature, Reamer- material, types (Hand and machine reamer), kinds, parts and their uses, determining hole size (or reaming), Reaming procedure. Screw threads: terminology, parts, types and their uses. Screw pitch gauge: material parts and uses. Taps British standard (B.S.W., B.S.F., B.A. & B.S.P.) and metric /BIS (course and fine) material, parts (shank body, flute, cutting edge). Tap wrench: material, parts, types (solid & adjustable types) and their uses removal of broken tap, studs (tap stud extractor).
23	Dies : British standard, metric and BIS standard, material, parts, types, Method of using dies. Die stock: material, parts and uses.
24	Drill troubles: causes and remedy. Equality of lips, correct clearance, dead centre, length of lips. Drill kinds : Fraction, metric, letters and numbers, grinding of drill.
25	Grinding wheel: Abrasive, grade structures, bond, specification, use, mounting and dressing. Bench grinder parts and use-radius gauge, fillet gauge, material, construction, parts function and metric, different dimensions, convex and concave uses care and maintenance.
26	Radius gauge, feeler gauge, hole gauge, and their uses.
27	Interchangeability: Necessity in Engg, field definition, BIS. Definition, types of limit, terminology of limits and fits-basic size, actual size, deviation, high and low limit, zero line, tolerance zone Different standard systems of fits and limits. British standard system, BIS system
28	Method of expressing tolerance as per BIS Fits : Definition, types description of each with sketch .Vernier height gauge : material construction, parts, graduations (English & Metric) uses, care and maintenance, Pig Iron : manufacturing process (by using)Blast furnace types, of pig Iron , properties and uses.
29	Cast Iron: manufacturing process by using (cupola furnace) types, properties and uses. Wrought iron- : manufacturing process (Puddling and Aston process) properties and uses. Steel: manufacturing process plain carbon steels, types, properties and uses.
30	Non-ferrous metals (copper, aluminum, tin, lead, zinc) properties and uses.
31	Counter sink, counter bore and spot facing-tools and nomenclature, Reamer- material, types (Hand and machine reamer), kinds, parts and their uses, determining hole size (or reaming), Reaming procedure.
32	Simple scraper- cir., flat, half round, triangular and hook scraper and their uses. Blue matching of scraped surfaces (flat and curved bearing surfaces)

Indicative Syllabus

Name of Post	Plant Assistant - Mechanical
---------------------	------------------------------

33	Vernier micrometer, material, parts, graduation, use, care and maintenance. Calibration of measuring instruments Introduction to mechanical fasteners and its uses. Screw thread micrometer: Construction, graduation and use.
34	Dial test indicator, construction, parts, material, graduation, Method of use,. Care and maintenance. Digital dial indicator. Comparators- measurement of quality in the cylinder bores.
35	Preventive maintenance-objective and function of P.M., section inspection. Visual and detailed, lubrication survey, system of symbol and colour coding. Revision, simple estimation of materials, use of handbooks and reference table. Possible causes for assembly failures and remedies.
36	Assembling techniques such as aligning, bending, fixing, mechanical jointing, threaded jointing, sealing, and torquing. Dowel pins: material, construction, types, accuracy and uses.
37	Safely precautions to be observed while working on a lathe, Lathe specifications, and constructional features. Lathe main parts descriptions- bed, head stock, carriage, tail stock, feeding and thread cutting mechanisms. Holding of job between centers, works with catch plate, dog, simple description of a facing and roughing tool and their applications.
38	Lathe cutting tools- Brief study of the nomenclature of Lathe cutting tools and necessity of correct grinding, solid and tipped, throw away type tools, cutting speed and feed and comparison for H.S.S., carbide tools. Use of coolants and lubricants.
39	Chucks and chucking the independent four-jaw chuck. Reversible features of jaws, the back plate, Method of clearing the thread of the chuck-mounting and dismounting, chucks, chucking true, face plate, drilling - method of holding drills in the tail stock, Boring tools and enlargement of holes.
40	General turning operations- parallel or straight, turning. Stepped turning, grooving, and shape of tools for the above operations. Appropriate method of holding the tool on tool post or tool rest, Knurling: - tools description, grade, uses, speed and feed, coolant for knurling, speed, feed calculation. Taper – definition, use and method of expressing tapers. Standard tapers-taper, calculations morse taper.
41	Screw thread definition – uses and application. Terminology of screw threads, square, worm, buttress, acme (non standard-screw threads),Principle of cutting screw thread in centre lathe –principle of chasing the screw thread – use of centre gauge, setting tool for cutting internal and external threads, use of screw pitch gauge for checking the screw thread.

Indicative Syllabus

Name of Post	Plant Assistant - Mechanical
---------------------	------------------------------

42	Screws: material, different types (inch & metric), uses Testing scraped surfaces: ordinary surfaces without a master plate.
43	Special files: types (pillar, Dread naught, Barret, warding) description.
44	System of drill size, Fractional size: number, letter and metric. Templates and gauges- Introduction, necessity, types. Limit gauge: Ring gauge, snap gauge, plug gauge, description and uses.
45	Description and uses of gauge- types (feeler, screw, pitch, radius, wire gauge),
46	Slip gauge: Necessity of using, classification & accuracy, set of blocks (English and Metric). Details of slip gauge. Metric sets 46: 103: 112. Wringing and building up of slip gauge and care and maintenance. Application of slip gauges for measuring, Sine bar-Principle, application & specification. Procedure to check adherence to specification and quality standards.
47	Locking device: Nuts- types (lock nut castle nut, slotted nuts, swam nut, grooved nut) Description and use.
48	Lapping: Application of lapping, material for lapping tools, lapping abrasives, charging of lapping tool. Surface finish importance, equipment for testing-terms relation to surface finish. Equipment for tasting surfaces quality – dimensional tolerances of surface finish.
49	Honing: Application of honing, material for honing, tools shapes, grades, honing abrasives. Frosting- its aim and the methods of performance.
50	. Manufacture: The name and types of gauge commonly used in gauging finished product-Method of selective assembly „Go“ system of gauges, hole plug basis of standardization
51	Bearing-Introduction, classification (Journal and Thrust), Description of each, ball bearing: Single row, double row, description of each, and advantages of double row.
52	Roller and needle bearings: Types of roller bearing. Description & use of each
53	Synthetic materials for bearing: The plastic laminate materials, their properties and uses in bearings such as phenolic, teflon polyamide (nylon).
54	Method of fitting ball and roller bearings
55	Bearing metals – types, composition and uses, lubricants purpose of using different types, description and uses of each type
56	Hardening and tempering, purpose of each method, tempering colour chart.

Indicative Syllabus

Name of Post	Plant Assistant - Mechanical
---------------------	------------------------------

57	Annealing and normalising, purpose of each method.
58	Case hardening and carburising and its methods, process of carburising (solid, liquid and gas).
59	Solder and soldering: Introduction-types of solder and flux. Method of soldering, Hard solder- Introduction, types and method of brazing. Production of gauges, templates and jigs. The objective of importance for preparing interchangeable components.
60	Drilling jig-constructional features, types and uses. Fixtures-Constructional features, types and uses.
61	Pipes and pipe fitting- commonly used pipes. Pipe schedule and standard sizes. Pipe bending methods. Use of bending fixture, pipe threads- Std. Pipe threads Die and Tap, pipe vices.
62	Standard pipefitting-. Methods of fitting or replacing the above fitting, repairs and erection on rainwater drainage pipes and house hold taps and pipe work. Use of tools such as pipe cutters, pipe wrenches, pipe dies, and tap, pipe bending machine etc.
63	Fire precautions-causes and types of fires, precautions against out break of fire. Fire Extinguishers-types and use.
64	Working material with finished surface as aluminium, duralumin, stainless steel, the importance of keeping the work free from rust and corrosion. The various coatings used to protect metals, protection coat by heat and electrical deposit treatments. Treatments and provide a pleasing finish as chromium silver plating and nickel plating, and galvanising.
65	Aluminium and its alloys. Uses, advantages and disadvantages, weight and strength as compared with steel.
66	Tapers on keys and cotters permissible by various standards. Discuss non-ferrous metals as brass, phosphor bronze, gunmetal, copper, aluminium etc. Their composition and purposes where and why used, advantages for specific purposes, surface wearing properties of bronze and brass.
67	Power transmission elements. The object of belts, their sizes and specifications, materials of which the belts are made, selection of the type of belts with the consideration of weather, load and tension methods of joining leather belts. V belts and their advantages and disadvantages, Use of commercial belts, dressing and resin creep and slipping, calculation.
68	Power transmissions, coupling types-flange coupling,-Hooks coupling-universal coupling and their different uses.

Indicative Syllabus

Name of Post	Plant Assistant - Mechanical
---------------------	------------------------------

69	Pulleys-types-solid, split and „V“ belt pulleys, standard calculation for determining size crowning of faces-loose and fast pulleys-jockey pulley. Types of drives-open and cross belt drives. The geometrical explanation of the belt drivers at an angle.
70	Power transmission –by gears, most common form spur gear, set names of some essential parts of the set-The pitch circles, Diametral pitch, velocity ratio of a gear set, Helical gear, herring bone gears, bevel gearing, spiral bevel gearing, hypoid gearing, pinion and rack, worm gearing, velocity ratio of worm gear. Repair to gear teeth by building up and dovetail method.
71	Method or fixing geared wheels for various purpose drives. General cause of the wear and tear of the toothed wheels and their remedies, method of fitting spiral gears, helical gears, bevel gears, worm and worm wheels in relation to required drive. Care and maintenance of gears.
72	Lubrication and lubricants- Method of lubrication. A good lubricant, viscosity of the lubricant, Main property of lubricant. How a film of oil is formed in journal. Bearings, method of lubrication-gravity feed, force (pressure) feed, splash lubrication. Cutting lubricants and coolants: Soluble off soaps, suds-paraffin, soda water, common lubricating oils and their commercial names, selection of lubricants. Chains, wire ropes and clutches for power transmission. Their types and brief description. Discuss the various rivets shape and form of heads, riveting tools for drawing up the importance of correct head size. The spacing of rivets. Flash riveting, use of correct tools, compare hot and cold riveting.
73	Importance of Technical English terms used in industry –(in simple definition only)Technical forms, process charts, activity logs, in required formats of industry, estimation, cycle time, productivity reports, job cards.
74	Installation, maintenance and overhaul of machinery and engineering equipment and Hydraulics & pneumatic symbols & exercise. Hydraulics pneumatic circuits. Clutch: Type, positive clutch (straight tooth type, angular tooth type) .
75	Washers-Types and calculation of washer sizes. The making of joints and fitting packing. The use of lifting appliances, extractor presses and their use. Practical method of obtaining mechanical advantage. The slings and handling of heavy machinery, special precautions in the removal and replacement of heavy parts.
76	Foundation bolt: types (rag, Lewis cotter bolt) description of each erection tools, pulley block, crow bar, spirit level, Plumb bob, pipe 2 X 4“, wire rope, manila rope, wooden block.

Note: The above syllabus is indicative in nature and candidates are advised to cover all the topics under academic curriculum of essential qualification of the post for Online Examination (CBT).

Name of the Post: Programmer Trainee

Indicative Syllabus:

1. Object Oriented Programming
2. Programming Basics
3. Data Structures and Algorithm
4. Database Management Systems
5. Software Engineering
6. Data Communication and Computer Networks
7. Information Security
8. Cloud Computing
9. Data Analytics

Note: The above syllabus is indicative in nature and candidates are advised to cover all the topics under academic curriculum of essential qualification of the post for Online Examination (CBT).

Name of the Post: Publicity Officer Trainee

Indicative Syllabus:

1. Organizational Communication
2. Corporate Communication
3. Corporate Communication Tools
4. Financial Communication
5. Corporate Identity and Corporate Brand Management

Note: The above syllabus is indicative in nature and candidates are advised to cover all the topics under academic curriculum of essential qualification of the post for Online Examination (CBT).

Name of the Post: Radiographer

Indicative Syllabus:

1. Fundamentals of Physiology & Basics of Biochemistry
2. Hematology & Clinical Pathology
3. General Microbiology
4. Clinical Biochemistry
5. Histopathology & Cytology
6. Immunology, Serology & Parasitology
7. Coagulation studies & Blood Bank procedures
8. Systematic Bacteriology, Mycology & Virology

Note: The above syllabus is indicative in nature and candidates are advised to cover all the topics under academic curriculum of essential qualification of the post for Online Examination (CBT).

Name of the Post: Staff Nurse

Indicative Syllabus:

1. Basic Anatomy and Physiology
2. Fundamental of Nursing
3. Medical Surgical Nursing
4. Midwifery and Obstetrical Nursing
5. Community Health Nursing
6. Paediatric Nursing
7. Health Education and Environmental Hygiene
8. Nutrition for Nurses
9. First Aid
10. Administration and Ward Management

Note: The above syllabus is indicative in nature and candidates are advised to cover all the topics under academic curriculum of essential qualification of the post for Online Examination (CBT).

Name of the Post: Welfare Assistant Trainee

Indicative Syllabus:

1. Human Resource Management
2. Team dynamics at work
3. Human resource metrics and analytics
4. Cross cultural management
5. Organizational design
6. HR planning and Audit
7. Performance management systems
8. Compensation and benefits management
9. Employee relations and Labour laws
10. Strategic HRM
11. International HRM
12. Historical Development of Social work
13. Method of Social Work and Research
14. Indian Society
15. Social Welfare Administration
16. NGO Management and Regulation
17. Social Policy in India
18. Social Welfare Programmes and Schemes
19. Contemporary Social Problems
20. Social legislations
21. National and State Constitutional Agencies.

Note: The above syllabus is indicative in nature and candidates are advised to cover all the topics under academic curriculum of essential qualification of the post for Online Examination (CBT).