

अध्याय – 04

पाठ्यक्रम

कुल अंक - 100

प्रश्न पत्र- 1		कुल अंक 100
01	सभी पदों के लिए ट्रेड से संबंधित पाठ्यक्रम के 75 वस्तुनिष्ठ Objective type प्रश्न (पाठ्यक्रम अन्त में संलग्न)	75 अंक
	कक्षा दसवी स्तर के निम्न विषयों से 25 वस्तुनिष्ठ Objective type प्रश्न 1. विज्ञान एवं गणित 2. सामान्य ज्ञान 3. तार्किक ज्ञान 4. बेसिक कम्प्यूटर ज्ञान	25 अंक

Directorate of Skill Development
Govt. of Madhya Pradesh
Recruitment - 2024 Syllabus for Training Officer

Syllabus for Training Officer - Fitter: (पेपर कोड A)

1. Plan and organize the work to make job as per specification applying different types of basic fitting operation and Check for dimensional accuracy following safety precautions. [Basic fitting operation – Marking, Hacksawing, Chiselling, Filing, Drilling, Taping and Grinding etc. Accuracy: $\pm 0.25\text{mm}$] CSC/N0304 2. Manufacture simple sheet metal items as per drawing and join them by soldering, brazing and riveting. CSC/N03001 3. Join metal components by riveting observing standard procedure. CSC/N0304 4. Join metal component by arc welding observing standard procedure. CSC/N0304 5. Cut and join metal component by gas (oxyacetylene) CSC/N0304 6. Produce components by different operations and check accuracy using appropriate measuring instruments. [Different Operations - Drilling, Reaming, Taping, Dieing; Appropriate Measuring Instrument – Vernier, Screw Gauge, Micrometer] CSC/N0304 7. Make different fit of components for assembling as per required tolerance observing principle of interchange ability and check for functionality. [Different Fit – Sliding, Angular, Step fit, 'T' fit, Square fit and Profile fit; Required tolerance: $\pm 0.04\text{ mm}$, angular tolerance: 30 min.] CSC/N0304 8. Produce components involving different operations on lathe observing standard procedure and check for accuracy. [Different Operations – facing, plain turning, step turning, parting, chamfering, shoulder turn, grooving, knurling, boring, taper turning, threading (external 'V' only)] CSC/N0110 9. Plan & perform simple repair, overhauling of different machines and check for functionality. [Different Machines – Drill Machine, Power Saw, Bench Grinder and Lathe] 10. Read and apply engineering drawing for different application in the field of work. 11. Demonstrate basic mathematical concept and principles to perform practical operations. Understand and explain basic science in the field of study, 12. Make & assemble components of different mating surfaces as per required tolerance by different surface finishing operations using different fastening components, tools and check functionality. [Different Mating Surfaces – Dovetail fitting, Radius fitting, Combined fitting; Different surface finishing operations – Scraping, Lapping and Honing; Different fastening components – Dowel pins, screws, bolts, keys and cotters; Different fastening tools-hand operated & power tools, Required tolerance - $\pm 0.02\text{mm}$, angular tolerance $\pm 10\text{ min.}$] CSC/N0304 13. Make different gauges by using standard tools & equipment and checks for specified accuracy. [Different Gauges – Snap gauge, Gap gauge; Specified Accuracy - $\pm 0.02\text{mm}$] CSC/N0304 14. Apply a range of skills to execute pipe joints, dismantle and assemble valves & fittings with pipes and test for leakages. [Range of skills – Cutting, Threading, Flaring, Bending and Joining] CSC/N0304 15. Make drill jig & produce components on drill machine by using jigs and check for correctness. CSC/N0304 16. Plan, dismantle, repair and assemble different damaged mechanical components used for power transmission & check functionality. [Different Damage Mechanical Components – Pulley, Gear, Keys, Jibs and Shafts.] CSC/N0304 17. Identify, dismantle, replace and assemble different pneumatics and hydraulics components. [Different components – Compressor, Pressure Gauge, Filter Regulator Lubricator, Valves and Actuators.] 18. Construct circuit of pneumatics and hydraulics observing standard operating procedure & safety aspect. 19. Plan & perform basic day to day preventive maintenance, repairing and check functionality. [Simple Machines – Drill Machine, Power Saw and Lathe] CSC/N0304 20. Plan, erect simple machine and test machine tool accuracy. [Simple Machines – Drill Machine, Power Saw and Lathe] 21. Read and apply engineering drawing for different application in the field of work. 22. Demonstrate basic mathematical concept and principles to perform practical operations. Understand and explain basic science in the field of study.

Syllabus for Training Officer - Welder (पेपर कोड B)

1. Set the gas welding plant and join MS sheet in different position following safety precautions. [Different position: - 1F, 2F, 3F, 1G, 2G, 3G.] (NOS: CSC/N0204)
2. Set the SMAW machine and perform different type of joints on MS in different position observing standard procedure. [different types of joints- Fillet (T-joint, lap & Corner), Butt (Square & V); different position - 1F, 2F, 3F,4F, 1G, 2G, 3G, 4G] (NOS: CSC/N0204)
3. Set the oxy- acetylene cutting plant and perform different cutting operations on MS plate. [Different cutting operation – Straight, Bevel, circular] (NOS: CSC/N0201)
4. Perform welding in different types of MS pipe joints by Gas welding (OAW). [Different types of MS pipe joints – Butt, Elbow, T-joint, angle (45°) joint, flange joint] (NOS: CSC/N0204)
5. Set the SMAW machine and perform welding in different types of MS pipe joints by SMAW. [Different types of MS pipe joints – Butt, Elbow, T-joint, angle (45°) joint, flange joint] (NOS: CSC/N0204)
6. Choose appropriate welding process and perform joining of different types of metals and check its correctness. [appropriate welding process – OAW, SMAW; Different metal – SS, CI, Brass, Aluminium] (NOS: CSC/N0204)
7. Demonstrate arc gouging operation to rectify the weld joints. (NOS: CSC/N0204)
8. Test welded joints by different methods of testing. [different methods of testing- Dye penetration test, Magnetic particle test, Nick break test, Free band test, Fillet fracture test] (NOS: CSC/N0204)
9. Set GMAW machine and perform welding in different types of joints on MS sheet/plate by GMAW in various positions by dip mode of metal transfer. [different types of joints Fillet (T-joint, lap, Corner), Butt (Square & V); various positions- 1F, 2F, 3F,4F, 1G, 2G, 3G] (NOS: CSC/N0209)
10. Set the GTAW machine and perform welding by GTAW in different types of joints on different metals in different position and check correctness of the weld. [different types of joints- Fillet (T-joint, lap, Corner), Butt (Square & V) ; different metals- Aluminium, Stainless Steel; different position- 1F & 1G] (NOS: CSC/N0212)
11. Perform Aluminium & MS pipe joint by GTAW in flat position. (NOS: CSC/N0212)
12. Set the Plasma Arc cutting machine and cut ferrous & non-ferrous metals. (NOS: CSC/N0207)
13. Set the resistance spot welding machine and join MS& SS sheet. (NOS: CSC/N0206)
14. Perform joining of different similar and dissimilar metals by brazing operation as per standard procedure. Different similar and dissimilar metals- Copper, MS, SS] CSC/N9410
15. Repair Cast Iron machine parts by selecting appropriate welding process. [Appropriate welding process- OAW, SMAW] CSC/N9411
16. Hard facing of alloy steel components/ MS rod by using hard facing electrode. CSC/N9412

17. Read and apply engineering drawing for different application in the field of work.
CSC/N9401

18. Demonstrate basic mathematical concept and principles to perform practical operations.
Understand and explain basic science in the field of study. CSC/N9402

Syllabus for training officer-Electrician: (पेपर कोड C)

Prepare profile with an appropriate accuracy as- per drawing following safety precautions. (NOS:PSS/N2001) 2. Prepare electrical wire joints; carry out soldering, crimping and measure insulation resistance of underground cable.(NOS:PSS/N0108) 3. Verify characteristics of electrical and magnetic circuits.(NOS:PSS/N6001,PSS/N6003) 4. Install, test and maintenance of batteries and solar cell.(NOS:PSS/N6001) 5. Estimate, Assemble, install and test wiring system. (NOS:PSS/N6001) 6. Plan and prepare Earthing installation. (NOS:PSS/N6002) 7. Plan and execute electrical illumination system and test. (NOS:PSS/N9403) 8. Select and perform measurements using analog/digital instruments and install/ diagnose smart meters. (NOS:PSS/N1707) 9. Perform testing, verify errors and calibrate instruments. (NOS:PSS/N9404) 10. Plan and carry out installation, fault detection and repairing of domestic appliances.(NOS:PSS/N6003) 11. Execute testing, evaluate performance and maintenance of transformer.(NOS:PSS/N2406,PSS/N2407) 12. Read and apply engineering drawing for different application in the field of work. (NOS:PSS/N9401) 13. Demonstrate basic mathematical concept and principles to perform practical operations. Understand and explain basic science in the field of study. (NOS:PSS/N9402) 14. Plan, execute commissioning and evaluate performance of DC machines.(NOS:PSS/N4402) 15. Execute testing, and maintenance of DC machines and motor starters. (NOS:PSS/N4402) 16. Plan, execute commissioning and evaluate performance of AC motors.(NOS:PSS/N1709) 17. Execute testing, and maintenance of AC motors and starters.(NOS:PSS/N1709) 18. Plan, Execute testing, evaluate performance and carry out maintenance of Alternator / MG set. (NOS:PSS/PSS/N9405) 19. Execute parallel Operation of alternators. (NOS:PSS/N9405) 20. Distinguish, organise and perform motor winding. (NOS:PSS/N4402) 21. Assemble simple electronic circuits and test for functioning. (NOS:PSS/N9406) 22. Assemble accessories and carry out wiring of control cabinets and equipment. (NOS:PSS/N9407) 23. Perform speed control of AC and DC motors by using solid state devices. (NOS:PSS/N9408) 24. Detect the faults and troubleshoot inverter, stabilizer, battery charger, emergency light and UPS etc. (NOS:PSS/N6002) 25. Plan, assemble and install solar panel. (NOS:PSS/N9409) 26. Erect overhead domestic service line, outline various power plant layout and explain smart distribution grid and its component. (NOS:PSS/N0106) 27. Examine the faults and carry out repairing of circuit breakers. (NOS:PSS/N7001) 28. Install and troubleshoot Electric Vehicle charging stations. (NOS:PSS/N9410) 29. Read and apply engineering drawing for different application in the field of work. (NOS:PSS/N9401) 30. Demonstrate basic mathematical concept and principles to perform practical operations. Understand and explain basic science in the field of study.

Syllabus for Training Officer- Computer Operator and Programming Assistant : (पेपर कोड D)

1. Install and setup operating system and related software in a computer following safety precautions.(NOS: SSC/N3022) 2. Create,format and edit document using word processing application software(NOS:SSC/N3022) 3. Create, format edit and develop a workbook by using spreadsheet application software. (NOS: SSC/N3022) 4. Create and customize slides for presentation. (NOS: SSC/N3022) 5.Create and manage database file using MySQL. (NOS: SSC/N9401) 6. Install, setup/configure, troubleshoot and secure computer network including Internet. (NOS: SSC/N3022) 7. Develop web pages using HTML and CSS.(NOS:SSC/N0503, SSC/N0501) 8. Develop web pages using Java Script. (NOS:SSC/N0503, SSC/N0501) 9. Create workbooks with advanced formulae, macros,charts, pivot tables and demonstrate ability to use Power tools. (NOS: SSC/N9402) 10. Browse, select and transact using E commerce websites. (NOS: SSC/N9403) 11. Secure information from Internet by using cyber security concept.(NOS:SSC/N9404) 12. Explain Cloud concepts &services. (NOS: SSC/N9405) 13. Write programs using Python/ Java language. (NOS: SSC/N9046, SSC/N9407)

Syllabus for Training Officer - Turner (पेपर कोड E)

1. Plan and organize the work to make job as per specification applying different types of basic fitting operations & check for dimensional accuracy following safety precautions. [Basic Fitting Operation – Marking, Hack sawing, filing, drilling, taping etc.] (NOS:CSC/N0304)
2. Set different shaped jobs on different chuck and demonstrate conventional lathe machine operation observing standard operation practice. [Different chucks: - 3 jaws & 4 jaws, different shaped jobs: - round, hexagonal, square](NOS: CSC/N0110)
3. Prepare different cutting tool to produce jobs to appropriate accuracy by performing different turning operations. [Different cutting tool – V tool, side cutting, parting, thread cutting (both LH & RH), Appropriate accuracy: - $\pm 0.06\text{mm}$, Different turning operation – Plain, facing, drilling, boring (counter & stepped), grooving, Parallel Turning, Step Turning, parting, chamfering, U -cut, Reaming, internal recess, knurling. (NOS: CSC/N0110)
4. Test the alignment of lathe by checking different parameters and adjust the tool post. [Different parameters – Axial slip of main spindle, true running of head stock, parallelism of main spindle, alignment of both the centres.] (NOS: CSC/N0110)
5. Set different components of machine & parameters to produce taper/ angular components and ensure proper assembly of the components. [Different component of machine: - Form tool, Compound slide, tail stock offset, taper turning attachment. Different machine parameters- Feed, speed, depth of cut.] (NOS: CSC/N0110)
6. Set the different machining parameter & tools to prepare job by performing different boring operations. [Different machine parameter- Feed, speed & depth of cut; Different boring operation – Plain, stepped & eccentric] (NOS: CSC/N0110)
7. Set the different machining parameters to produce different threaded components applying method/ technique and test for proper assembly of the components. [Different thread: - BSW, Metric, Square, ACME, Buttress.] (NOS: CSC/N0110)
8. Set the different machining parameter & lathe accessories to produce components applying techniques and rules and check the accuracy. [Different machining parameters: - Speed, feed & depth of cut; Different lathe accessories: - Driving Plate, Steady rest, dog carrier and different centres.] (NOS: CSC/N0110)
9. Plan and perform basic maintenance of lathe & grinding machine and examine their functionality. (NOS: CSC/N0110)
10. Read and apply engineering drawing for different application in the field of work. (NOS: CSC/N9401)
11. Demonstrate basic mathematical concept and principles to perform practical operations. Understand and explain basic science in the field of study. (NOS: CSC/N9402)
12. Plan & set the machine parameter to produce precision engineering component to appropriate accuracy by performing different turning operation. [Appropriate accuracy - $\pm 0.02\text{mm}$ / (MT - 3) (proof turning); Different turning operation – Plain turning, taper turning, boring threading, knurling, grooving, chamfering etc.] (NOS: CSC/N0110)

13. Set & Produce components on irregular shaped job using different lathe accessories. [Different Lathe accessories: - Face plate, angle plate] (NOS: CSC/N0110)
14. Plan and set the machine using lathe attachment to produce different utility component/ item as per drawing. [Different utility component/ item – Crank shaft (single throw), stub arbour with accessories etc.] (NOS: CSC/N0110)
15. Set the machining parameters and produce & assemble components by performing different boring operations with an appropriate accuracy. [Different boring operation – eccentric boring, stepped boring; appropriate accuracy - $\pm 0.05\text{mm}$] (NOS: CSC/N0110)
16. Calculate to set machine setting to produce different complex threaded component and check for functionality. [Different complex threaded component- Half nut, multi start threads (BSW, Metric & Square)] (NOS: CSC/N0110)
17. Set (both job and tool) CNC turn centre and produce components as per drawing by preparing part programme. (NOS:CSC/NO115)
18. Manufacture and assemble components to produce utility items by performing different operations & observing principle of interchangeability and check functionality. [Utility item: - screw jack/ vice spindle/ Box nut, marking block, drill chuck, collet chuck etc.; different operations: - threading (Square, BSW, ACME, Metric), Thread on taper, different boring (Plain, stepped)] (NOS:CSC/NO115)
19. Make a process plan to produce components by performing special operations on lathe and check for accuracy. [Accuracy - $\pm 0.02\text{mm}$ or proof machining & $\pm 0.05\text{mm}$ bore; Special operation – Worm shaft cutting (shaft) boring, threading etc.] (NOS:CSC/NO115)
20. Read and apply engineering drawing for different application in the field of work. (NOS: CSC/N9401)
21. Demonstrate basic mathematical concept and principles to perform practical operations. Understand and explain basic science in the field of study. (NOS: CSC/N9402)

Syllabus for Training Officer - Machinist: (पेपर कोड F)

1. Plan and organize the work to make job as per specification applying different types of basic fitting operation and check for dimensional accuracy following safety precautions. [Basic fitting operation – marking, Hack sawing, Chiselling, Filing, Drilling, Taping and Grinding etc. Accuracy: $\pm 0.25\text{mm}$] CSC/N0304
2. Produce components by different operations and check accuracy using appropriate measuring instruments.[Different Operations - Drilling, Reaming, Tapping, Dieing; Appropriate Measuring Instrument – Vernier, Screw Gauge, Micrometer] CSC/N9405
3. Make different fit of components for assembling as per required tolerance observing principle of inter changeability and check for functionality. [Different Fit – Sliding, Angular, Step fit, ‘T’ fit, Square fit and Profile fit; Required tolerance: $\pm 0.2\text{ mm}$, angular tolerance: 1 degree.] CSC/N0304
4. Set different shaped jobs on different chuck and demonstrate conventional lathe machine operation observing standard operation practice. [Different chucks: 3 jaws & 4 jaws, different shaped jobs: round, square, hexagonal] CSC/N0110
5. Prepare different cutting tool to produce jobs to appropriate accuracy by performing different turning operations. [Different cutting tool – V tool, side cutting, parting, thread cutting (both LH & RH), Appropriate accuracy: - $\pm 0.06\text{mm}$, Different turning operation – Plain, facing, drilling, boring (counter & stepped), grooving, Parallel Turning, Step Turning, parting, chamfering, U -cut, Reaming, knurling.] CSC/N0110
6. Set different components of machine & parameters to produce taper/ angular components and ensure proper assembly of the components. [Different component of machine: Form 5. LEARNING OUTCOME 11 Machinist tool, Compound slide, tail stock offset; Different machine parameters- Feed, speed, depth of cut.] CSC/N0110
7. Set the different machining parameters to produce metric-v threaded components applying method/ technique and test for proper assembly of the components. CSC/N0110
8. Set the different machining parameters and cutting tool to prepare job by performing different slotting operation. [Different machining parameters – feed, speed and depth of cut. Different slotting operations–concave & convex surface, internal key ways, profiling, making internal sprocket with an accuracy of $\pm 0.04\text{ mm}$] CSC/N9406
9. Set the different machining parameters and cutters to prepare job by performing different milling operation and indexing. [Different machining parameters – feed, speed and depth of cut. Different milling operations – plain, face, angular, form, gang, straddle milling] CSC/N9407
10. Set the different machining parameters to produce square & “V” threaded components applying method/ technique and test for proper assembly of the components. CSC/N0110
11. Produce components of high accuracy by different operations using grinding. [Different operations – surface grinding, cylindrical grinding with an accuracy of $\pm 0.01\text{ mm}$] CSC/N0109
12. Read and apply engineering drawing for different application in the field of work. CSC/N9401

13. Demonstrate basic mathematical concept and principles to perform practical operations. Understand and explain basic science in the field of study. CSC/N9402
14. Re-sharpen different single & multipoint cutting tool. [Different single point tools, slab milling cutter, side & face milling cutter, end mill cutter and shell end mill cutter.] CSC/N0109
15. Set different machining parameters and cutters to prepare job by different milling machine operations. [Different machining parameters - feed, speed, depth of cut, different machining operation – facing, drilling, tapping, reaming, counter boring, counter sinking, spot facing, and boring slot cutting.] CSC/N9407
16. Set the different machining parameters and cutters to prepare components by performing different milling operation and indexing. [Different machining parameters – feed, speed and depth of cut. Different components – Rack, Spur Gear, External Spline, Steel Rule, Clutch, Helical Gear] CSC/N9407
17. Set (both job and tool) CNC turning centre and produce components as per drawing by preparing part programme. CSC/NO115
18. Set CNC VMC (Vertical Machining Center) and produce components as per drawing by preparing part programme. CSC/N9408 12 Machinist
19. Plan and perform simple repair, overhauling of different machines and check for functionality. [Different Machines – Drilling Machine, milling machine and Lathe] CSC/N9403
20. Set the different machining parameters and cutters to prepare components by performing different milling operation and indexing. [Different machining parameters – feed, speed and depth of cut. Different components – end mill, bevel gear, cam, worm & worm wheel] CSC/N9407
21. Read and apply engineering drawing for different application in the field of work. CSC/N9401
22. Demonstrate basic mathematical concept and principles to perform practical operations. Understand and explain basic science in the field of study. CSC/N9402

Syllabus for Training Officer - MECHANIC DIESEL: (पेपर कोड G)

1. Check & perform Measuring & marking by using various Measuring & Marking tools (Vernier Callipers, Micrometre, Telescope gauges, Dial bore gauges, Dial indicators, straightedge, feeler gauge, thread pitch gauge, vacuum gauge, tire pressure gauge.) Following safety precautions. ASC/N9401 2. Plan & perform basic fastening & fitting operation by using correct hand tools, Machine tools & equipment. CSC/N0304 3. Trace and Test all Electrical & Electronic components & circuits and assemble circuit to ensure functionality of system. ELE/N9412 4. Join components by using Arc & Gas welding. CSC/N0304 5. Trace & Test Hydraulic and Pneumatic components. CSC/N9404 6. Check & Interpret Vehicle Specification data and VIN. Select & operate various Service Station equipment. ASC/N9402 7. Dismantle & assemble of Diesel Engine from vehicle (LMV/HMV) along with other accessories (torqueing methods, handling parts). ASC/N9403 8. Overhaul, service and testing Diesel Engine, its parts and check functionality. ASC/N9404 9. Trace, Test & Repair Cooling and Lubrication System of engine (types of coolants and oils relevant to the engines.) ASC/N9405 10. Trace & Test Intake and Exhaust system of engine. (cleaning egr valves, exhaust inlet valves, ports and manifolds) ASC/N9406 11. Service Diesel Fuel System and check proper functionality (calibration of mechanical and electronic pumps, checking injectors, filters) ASC/N9404 12. Plan & overhaul the stationary engine and Governor and check functionality. ASC/N9404 13. Monitor emission of vehicle and execute different operation to obtain optimum pollution as per emission norms. ASC/N9407 14. Carry out overhauling of Alternator and Starter Motor. ASC/N9408 15. Diagnose & rectify the defects in LMV/HMV to ensure functionality of vehicle. ASC/N9409 16. Read and apply engineering drawing for different application in the field of work. CSC/N9401 17. Demonstrate basic mathematical concept and principles to perform practical operations. Understand and explain basic science in the field of study. CSC/N9402

Syllabus for Training Officer - Mechanic Motor Vehicle (पेपर कोड H)

1. Check & perform Measuring & marking by using various Measuring & Marking tools(Vernier Calliper, Micrometer, Telescope gauges, Dial bore gauges, Dial indicators, straightedge, feeler gauge, thread pitch gauge, vacuum gauge, tire pressure guage)following safety precautions. (NOS: ASC/N1404)
2. Plan & perform basic fastening & fitting operation by using correct hand tools, Machine tools & equipments. (NOS: ASC/N1405)
3. Test various electrical/ electronic components using proper measuring instruments and compare the data using standard parameters. (NOS: ASC/N1438)
4. Check & Interpret Vehicle Specification data and VIN and Select & operate various Service Station Equipments. (NOS: ASC/N1404)
5. Dismantle & assemble of Engine from vehicle (LMV/HMV) along with other accessories. (NOS: ASC/N1405)
6. Overhaul Engine and check functionality. (NOS: ASC/N1405)
7. Trace, Test & Repair Cooling and Lubrication System of engine. (NOS: ASC/N1404)
8. Trace & Test Intake and Exhaust system of engine. (NOS: ASC/N1405)
9. Service Fuel System and check proper functionality. (NOS: ASC/N1405) 10. Test Engine Performance and set idling speed. (NOS: ASC/N1405)
11. Monitor emission of vehicle and execute different operation to obtain optimum pollution as per emission norms. (NOS: ASC/N9435)
12. Carryout overhauling of Alternator and Starter Motor. (NOS: ASC/N9436)
13. Diagnose & rectify the defects in LMV/HMV to ensure functionality of vehicle. (NOS: ASC/N1404, ASC/N1405, ASC/N1438)
14. Read and apply engineering drawing for different application in the field of work. (NOS: ASC/N9420)
15. Demonstrate basic mathematical concept and principles to perform practical operations. Understand and explain basic science in the field of study. (NOS: ASC/N9421)
16. Plan & perform maintenance, diagnosis and servicing of transmission system. (NOS: ASC/N1404, ASC/N1405) 5. LEARNING OUTCOME 13 Mechanic Motor Vehicle (MMV)
17. Plan & perform maintenance, diagnosis and servicing of Vehicle Control System. (NOS: ASC/N9437)
18. Troubleshoot vehicle Engine components and ascertain repair. (NOS: ASC/N9438)
19. Plan & service Electronic Control Unit and check functionality. (NOS: ASC/N1438)

20. Diagnose & rectify the defects in vehicle to ensure functionality of vehicle. (NOS: ASC/N1438)
21. Carryout overhauling of charging system. (NOS: ASC/N1438)
22. Carryout overhauling of starting system. (NOS: ASC/N1438)
23. Troubleshoot electrical components of vehicle and ascertain repair. (NOS: ASC/N1438)
24. Overhaul, service and testing Vehicle Air Conditioning system, its parts and check functionality. (NOS: ASC/N1438)
25. Drive vehicle following Traffic Regulations and maintenance of good road conduct. (NOS: ASC/N14040)
26. Identify and study of Electric Vehicle components and Performance comparison of EV and IC engine vehicles. (Components of Electric Vehicle such as Motor, Motor Controller, Battery Pack, Battery Management System, Charging System etc.) (NOS: ASC/N9439)
27. Read and apply engineering drawing for different application in the field of work. (NOS: ASC/N9420)
28. Demonstrate basic mathematical concept and principles to perform practical operations. Understand and explain basic science in the field of study. (NOS: ASC/N9421)

Syllabus for Training Officer - Surveyor (पेपर कोड 1)

1. Concept of drawing & sheet layout following safety precautions. (NOS: CON/N9002)
2. Draw lettering & numbering applying drawing instruments. (NOS: IES/N9402)
3. Draw plain geometrical figures, curves & conics. (NOS: IES/N9402)
4. Construct plain scale, diagonal scale, comparative scale, vernier scale. (NOS: IES/N9402)
5. Draw conventional signs & symbols used in surveying. (NOS: IES/N9441)
6. Perform site survey using chain/ tape & prepare a site plan. (NOS: CON/N0904)
7. Perform the site survey using prismatic compass. (NOS: IES/N9418)
8. Perform Auto Cad drawing. (NOS: CON/N0907)
9. Perform the site survey using plane table. (NOS: IES/N9412)
10. Perform theodolite survey. (NOS: CON/N0906)
11. Perform traverse survey by theodolite & prepare a site map. (NOS: CON/N0906)
12. Determine of R.L & heights of different points by levelling instruments. (NOS: CON/N0905)
13. Perform a road project survey. (NOS: IES/N9442)
14. Perform AutoCAD drawing (single story building). (NOS: CON/N1302)
15. Demonstrate basic mathematical concept and principles to perform practical operations. Understand and explain basic science in the field of study. (NOS: IES/N9423) SECOND YEAR:
16. Performing tachometric survey using tachometer. (NOS: IES/N9443)
17. Make topography map using level instrument with contours. (NOS: CON/N0907)
18. Concept & set out of curves. (NOS: IES/N9444)
19. Perform survey work using modern survey instruments (Total station) for prepare a map. (NOS: CON/N0906)
20. Concept of cadastral survey & make a site plan. (NOS: IES/N9445)
21. Perform survey work to prepare a topographical map, cadastral map (mouza map), road Project (Survey camp in a suitable hilly/undulated area). (NOS: IES/N9446)
22. Perform AutoCAD drawing from field survey data. (NOS: IES/N9447)
23. Concept & draw cartographic projection. (NOS: IES/N9448)
24. Plan and prepare setting of GIS & GPS, techniques in various fields. (NOS: IES/N9449)
25. Perform Hydrographic survey (cross section & velocity determination) using hydrographic survey instruments. (NOS: IES/N9450)
26. Perform transmission line site survey & prepare a site plan. (NOS: IES/N9451)
27. Perform railway line site survey line survey using modern survey instruments. (NOS: IES/N9452)
28. Draw a double storied building by AutoCAD & prepare a detail estimate of the building. (NOS: CON/N1302)
29. Demonstrate basic mathematical concept and principles to perform practical operations. Understand and explain basic science in the field of study. (NOS: IES/N9423)

Syllabus for Training Officer - Stenographer Secretarial Saaistant (Hindi)/

आशुलिपिक सचिवीय सहायक (हिंदी): (पेपर कोड J)

1. आशुलिपि (शार्टहैण्ड) में निर्देश लेने एवं कम्प्यूटर का प्रयोग कर उसे कागज पर रूपांतरित (ट्रांसक्राइब) करने में दक्षता। (NOS : MEP/N0237)
2. कम्प्यूटर हार्डवेयर एवं विधियों का ज्ञान कम्प्यूटर पर उच्च गति टंकण में दक्षता (NOS : MEP/N0216),
3. विभिन्न प्रकार के पत्रों की जानकारी व्यवस्था एक पत्रो पर श्रुति लेखन श्रुति लेख एवं प्रतिलेखन करने की दक्षता।(NOS : MEP/N0237)
4. कम्प्यूटर एप्लीकेशन साफ्टवेयर एम एस एक्सेल, वर्ल्ड पावर पॉइंट प्रेजेंटेशन करने की दक्षता (NOS : MEP/N0225),
5. कार्यालयीन वातावरण आंतरिक सजावट, सफाई, सुरक्षा का महत्व ज्ञान एवं कार्यालय प्रबंधन कार्यो एवं कर्तव्य से परिचीत (NOS : MEP/N0237), (NOS : MEP/N9903), (NOS : MEP/N0224),
6. कार्यालय में डायरी डिस्पैच, स्टेशनरी, दस्तावेजों फाईलिंग प्रबंधन तथा कार्यालय सचिव के कार्यो एवं कर्तव्यों से परिचीत (NOS : MEP/N0237), (NOS : MEP/N0241), (NOS : MEP/N0201),
7. विभिन्न कार्यालयीन उपकरणों को पहचान कर उनके सही प्रयोग एवं रखरखाव से अवगत(NOS : MEP/N0237) (NOS : MEP/N0241), (NOS : MEP/N0216), (NOS : MEP/N0203),
8. विभिन्न डाकघर सेवाओं से परिचीत(NOS : MEP/N0238),
9. सभी प्रकार के मैनुअल एवं ऑनलाईन पत्राचार करने में सक्षम(NOS : MEP/N0216)

Syllabus for Training Officer - Employability Skills /Social Study (पेपर कोड K)

Introduction to Employability Skills

To be competent, the individual must be able to:

1. Understand the significance of employability skills in meeting the current job market requirement and future of work.
2. Identify and explore learning and employability relevant portals
3. Research about the different industries, job market trends, latest skills required and the available opportunities.
4. Identify employability skills required for jobs in various industries

Constitutional values – Citizenship

5. Follow personal values and ethics such as honesty, integrity, caring and respecting others, etc.
6. Follow and promote environmentally sustainable practices
7. recognize the significance of constitutional values, including civic rights and duties, citizenship, responsibility towards society etc. and personal values and ethics such as honesty, integrity, caring and respecting others, etc. for personal growth and the nation's progress

Becoming a Professional in the 21st Century

8. Recognize the significance of 21st Century Skills for employment
9. Adopt a continuous learning mindset for personal and professional development
10. practice the 21st Century Skills such as Self-Awareness, Behavior Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn for continuous learning etc. in personal and professional life

Basic English Skills

11. Use English as a medium of formal and informal communication while dealing with topics of everyday conversation in different contexts
12. Speak over the phone in English, in an audible manner, using appropriate greetings, opening, and closing statements both on personal and work front
13. Read and understand routine information, instructions, emails, letters etc. written in English
14. Write short messages, notes, letters, e-mails etc., using accurate English
15. Use basics English for everyday conversation in different contexts, in person and over the telephone

Career Development & Goal Setting

16. Identify career goals based on the skills, interests, knowledge, and personal attributes
17. Understand the difference between job and career
18. Prepare a career development plan with short- and long-term goals, based on aptitude

Communication Skills

19. Follow verbal and non-verbal communication etiquette while communicating in professional and public settings
20. Use active listening techniques for effective communication
21. Communicate in writing using appropriate style and format based on formal or informal requirements
22. Work collaboratively with others in a team
23. Follow verbal and non-verbal communication etiquette and active listening techniques in various settings

Diversity and Inclusion

24. Ensure personal behavior, conduct, and use appropriate communication by taking gender into consideration
25. Empathize with a PwD and aid a PwD, if asked

26. Escalate any issues related to sexual harassment at the workplace in accordance with the POSH

Act

27. Communicate and behave appropriately with all genders and PwD

Financial and Legal Literacy

28. Identify and select reliable institutions for various financial products and services such as bank account, debit and credit cards, loans, insurance etc.

29. Carry out offline and online financial transactions, safely and securely, using various methods and check the entries in the passbook

30. Identify common components of salary and compute income, expenses, taxes, investments etc.

31. Identify relevant rights and laws and use legal aids to fight against legal exploitation

Essential Digital Skills

32. Operate digital devices and use their features and applications securely and safely

33. Carry out basic internet operations by connecting to the internet safely and securely, using the mobile data or other available networks through Bluetooth, Wi-Fi, etc.

34. Display responsible online behavior while using various social media platforms

35. Create a personal email account, send and process received messages as per requirement

36. Carry out basic procedures in documents, spreadsheets and presentations using respective and appropriate applications

37. Utilize virtual collaboration tools to work effectively

38. Use e- mail and social media platforms and virtual collaboration tools to work effectively

39. Use basic features of word processor, spreadsheets, and presentations

Entrepreneurship

40. Identify different types of Entrepreneurship and Enterprises

41. Use research and networking skills to identify and assess opportunities for potential business

42. Develop a business plan and a work model, considering the 4Ps of Marketing- Product, Price, Place and Promotion

43. Identify sources of funding, anticipate, and mitigate any financial/ legal hurdles for the potential business opportunity

Customer Service

44. Identify different types of customers

45. Identify and respond to customer requests and needs in a professional manner

46. Use appropriate tools to collect customer feedback

47. Follow appropriate hygiene and grooming standards.

Getting ready for apprenticeship & Jobs

48. Create professional Curriculum vitae (Résumé)

49. Search for suitable jobs using reliable offline and online sources such as Employment exchange, recruitment agencies, newspapers etc. and job portals, respectively

50. Apply to identified job openings using offline /online methods as per requirement

51. Answer questions politely, with clarity and confidence, during recruitment and selection

52. Identify apprenticeship opportunities and register for it as per guidelines and requirements

Syllabus for post name: MaintenanceMechanic. (पेपर कोड L)

1. Produce components by different operations and check accuracy using appropriate measuring instruments.[Different Operations - Drilling, Reaming, Tapping, Dieing; Appropriate Measuring Instrument – Vernier, Screw Gauge, Micrometer] CSC/N9405.
2. Set the different machining parameters and cutting tool to prepare job by performing different slotting operation. [Different machining parameters – feed, speed and depth of cut. Different slotting operations CSC/N9406.
3. Set the different machining parameters and cutters to prepare job by performing different milling operation CSC/N9407.
4. Demonstrate basic mathematical concept and principles to perform practical operations. Understand and explain basic science in the field of study. CSC/N9402.
5. Re-sharpen different single & multipoint cutting tool. [Different single point tools, slab milling cutter, side & face milling cutter, end mill cutter and shell end mill cutter.] CSC/N0109.
6. Set different machining parameters and cutters to prepare job by different milling machine operations. [Different machining parameters - feed, speed, depth of cut, different machining operation – facing, drilling, tapping, reaming, counter boring, counter sinking, spot facing, and boring slot cutting.] CSC/N9407.
7. Plan and perform simple repair, overhauling of CNC machine/conventional machine to check for functionality. [Different Machines – Drilling Machine, milling machine and Lathe] CSC/N9403.
8. Plan and organize the work to make job as per specification applying different types of basic fitting operations & check for dimensional accuracy following safety precautions. [Basic Fitting Operation – Marking, Hack sawing, filing, drilling, tapping etc.] (NOS:CSC/N0304)
9. Set different shaped jobs on different chuck and demonstrate conventional lathe machine operation observing standard operation practice. [Different chucks: - 3 jaws & 4 jaws, different shaped jobs: - round, hexagonal, square](NOS: CSC/N0110)
10. Prepare different cutting tool to produce jobs to appropriate accuracy by performing different turning operations. [Different cutting tool – V tool, side cutting, parting, thread cutting (both LH & RH), Appropriate accuracy: - $\pm 0.06\text{mm}$, Different turning operation – Plain, facing, drilling, boring (counter & stepped), grooving, Parallel Turning, Step Turning, parting, chamfering, U -cut, Reaming, internal recess, knurling. (NOS: CSC/N0110)
11. Test the alignment of lathe by checking different parameters and adjust the tool post. [Different parameters – Axial slip of main spindle, true running of head stock, parallelism of main spindle, alignment of both the centres.] (NOS: CSC/N0110)
12. Set different components of machine & parameters to produce taper/ angular components and ensure proper assembly of the components. [Different component of machine: - Form tool, Compound slide, tail stock offset, taper turning attachment. Different machine parameters- Feed, speed, depth of cut.] (NOS: CSC/N0110)
13. Set the different machining parameter & tools to prepare job by performing different boring operations. [Different machine parameter- Feed, speed & depth of cut; Different boring operation – Plain, stepped & eccentric] (NOS: CSC/N0110)
14. Set the different machining parameter & lathe accessories to produce components applying techniques and rules and check the accuracy. [Different machining parameters: - Speed, feed & depth of cut; Different lathe accessories: - Driving Plate, Steady rest, dog carrier and different centres.] (NOS: CSC/N0110)
15. Plan and perform basic maintenance of lathe & grinding machine, Drill Machine, Power Saw, Bench Grinder and examine their functionality. (NOS: CSC/N0110)
16. Read and apply engineering drawing for different application in the field of work. (NOS: CSC/N9401)

17. Plan & set the machine parameter to produce precision engineering component to appropriate accuracy by performing different turning operation. [Appropriate accuracy - $\pm 0.02\text{mm}$ / (MT - 3) (proof turning); Different turning operation – Plain turning, taper turning, boring threading, knurling, grooving, chamfering etc.] (NOS: CSC/N0110)
18. Set & Produce components on irregular shaped job using different lathe accessories. [Different Lathe accessories: - Face plate, angle plate] (NOS: CSC/N0110)
19. Set the machining parameters and produce & assemble components by performing different boring operations with an appropriate accuracy. [Different boring operation – eccentric boring, stepped boring; appropriate accuracy - $\pm 0.05\text{mm}$] (NOS: CSC/N0110)
20. Produce components by different operations and check accuracy using appropriate measuring instruments. [Different Operations - Drilling, Reaming, Taping, Dieing; Appropriate Measuring Instrument – Vernier, Screw Gauge, Micrometer] CSC/N0304.
21. Prepare electrical wire joints; carry out soldering, crimping and measure insulation resistance of underground cable. (NOS: PSS/N0108)
22. Install, test and maintenance of batteries and solar cell. (NOS: PSS/N6001)
23. Estimate, Assemble, install and test wiring system. (NOS: PSS/N6001)
24. Plan and prepare Earthing installation. (NOS: PSS/N6002)
25. Select and perform measurements using analog / digital instruments and install/diagnose smart meters. (NOS: PSS/N1707)
26. Perform testing, verify errors and calibrate instruments. (NOS: PSS/N9404)
27. Plan and carry out installation, fault detection and repairing of domestic appliances. (NOS: PSS/N6003)
28. Execute testing; evaluate performance and maintenance of transformer. (NOS: PSS/N2406, PSS/N2407)
29. Execute testing, and maintenance of DC machines and motor starters. (NOS: PSS/N4402)
30. Plan, execute commissioning and evaluate performance of AC motors. (NOS: PSS/N1709)
31. Execute testing, and maintenance of AC motors and starters. (NOS: PSS/N1709)
32. Plan, execute testing, evaluate performance and carry out maintenance of Alternator / MG set. (NOS: PSS/PSS/N9405)
33. Assemble accessories and carry out wiring of control cabinets and equipment. (NOS: PSS/N9407)
34. Detect the faults and troubleshoot inverter, stabilizer, battery charger, emergency light and UPS etc. (NOS: PSS/N6002)
35. Identify safety symbols and hazards, preventive measures for electrical accidents, methods of firefighting, types and working of fire extinguishers, elementary first aid, PPE, personal and workshop safety, care and maintenance of trade tools.