

## " महाराष्ट्र नगरपरिषदा , नगरपंचायती व औद्योगिक नगरे राज्यसेवा परीक्षा

### १. नगरपरिषद अभियांत्रिकी सेवा (सर्वसाधारण) संयुक्त पूर्व परीक्षा

प्रश्नपत्रिका संख्या: एक

विषय	प्रश्न संख्या	गुण	दर्जा	माध्यम	कालावधी	प्रश्नपत्रिकेचे स्वरूप
मराठी	१०	१०	बारावी	मराठी	दीड तास	वस्तुनिष्ठ बहुपर्यायी
इंग्रजी	१०	१०	बारावी	इंग्रजी		
सामान्य अध्ययन (General Studies)	२०	२०	पदवी	मराठी व इंग्रजी		
Engineering Aptitude Test (अभियांत्रिकी अभियोग्यता चाचणी)	६०	६०	पदवी	इंग्रजी		
एकूण	१००	१००				

### अभ्यासक्रम

नगरपरिषद अभियांत्रिकी सेवा (सर्वसाधारण) संयुक्त पूर्व परीक्षा अभ्यासक्रम	
अ. क्र	विषय
१.	मराठी: सर्वसामान्य शब्दसंग्रह, वाक्यरचना, व्याकरण, म्हणी व वाक्यप्रचार यांचा अर्थ आणि उपयोग तसेच उतान्यावरील प्रश्नांची उत्तरे <b>Marathi :</b> सर्वसामान्य शब्दसंग्रह , म्हणी व वाक्यप्रचार ,व्याकरण ,वाक्यरचना यांचा अर्थ आणि उपयोग तसेच उतान्यावरील प्रश्नांची उत्तरे,
२.	इंग्रजी: Common Vocabulary, Sentence Structure, Grammar, Use of Idioms and phrases & their meaning and comprehension of passage. <b>2 English:</b> Common Vocabulary, Sentence Structure, Grammar, Use of Idioms and phrases & their meaning and comprehension of passage.
३	सामान्य अध्ययन <b>General Studies</b>
३.१	भारताचा विशेषतः महाराष्ट्राचा इतिहास • Indian History with special reference to Maharashtra
३.२	भारताचा विशेषतः महाराष्ट्राचा भूगोल • Indian Geography with special reference to Maharashtra

नगरपरिषद अभियांत्रिकी सेवा (सर्वसाधारण) संयुक्त पूर्व परीक्षा अभ्यासक्रम		
अ. क्र	विषय	
३.३	<p>भारतीय अर्थव्यवस्था</p> <ul style="list-style-type: none"> <li>• भारतीय आयात निर्यात -</li> <li>• राष्ट्रीय विकासात सरकारी ,सहकारी , ग्रामीण बँकांची भूमिका</li> <li>• शासकीय अर्थव्यवस्था - अर्थसंकल्प लेखा ,लेखापरीक्षण इत्यादी</li> <li>• किंमती वाढण्याची कारणे व उपाय</li> </ul>	<p>Indian Economy</p> <ul style="list-style-type: none"> <li>• Indian Imports – Exports</li> <li>• Role of Government, Co-operative, Rural banks in national development</li> <li>• Government Economy- Budgets Accounts and Audit etc</li> <li>• Inflation – reasons and measures</li> </ul>
३.४	<p>भारतीय राज्य व्यवस्था :-</p> <ul style="list-style-type: none"> <li>• भारताच्या घटनेचा प्राथमिक अभ्यास,</li> <li>• संसद व राज्य विधान मंडळ इ.</li> <li>• राज्य व्यवस्थापन (प्रशासन)</li> <li>• ग्रामीण व शहरी प्रशासन</li> </ul>	<p>Indian Political System :-</p> <ul style="list-style-type: none"> <li>• Indian Polity &amp; Constitution</li> <li>• Parliament, state assembly etc.</li> <li>• State administration</li> <li>• Rural and Urban administration</li> </ul>
३.५	चालू घडामोडी- जागतिक व भारतासंबंधी	Current Affairs related to India and World,
३.६	<p>पर्यावरण:-</p> <ul style="list-style-type: none"> <li>• मानवी विकास व पर्यावरण,</li> <li>• पर्यावरण पुरक विकास,</li> <li>• नैसर्गिक साधनसंपत्तीचे संधारण विशेषत ,वनसंधारण :</li> <li>• विविध प्रकारची प्रदुषणे व पर्यावरणीय आपत्ती ,</li> <li>• पर्यावरण संवर्धनात कार्यरत असलेल्या राज्यजागतिक / राष्ट्र/ संस्था /पातळीवरील संघटना</li> </ul>	<p>Environment:-</p> <ul style="list-style-type: none"> <li>• Human development and environment,</li> <li>• Environment friendly development</li> <li>• Conservation of natural resources specially forest conservation</li> <li>• Types of pollutions and envi mental disasters</li> <li>• Institutions engaged in environmental conseversation at State, National and International Level</li> </ul>
४	Engineering Aptitude Test (अभियांत्रिकी अभियोग्यता चाचणी)	
4.1	Applied Mathematics –	
a)	Matrices – Types of Matrices (Symmetric, Skew-symmetric, Hermitian, Skew Hermitian, Unitary, Orthogonal Matrices, properties of Matrices) Rank of a Matrix using Echelon	

नगरपरिषद अभियांत्रिकी सेवा (सर्वसाधारण) संयुक्त पूर्व परीक्षा अभ्यासक्रम	
अ. क्र	विषय
	forms, reduction to normal form, PAQ in normal form, system of homogeneous and non-homogeneous equations. Linear dependent and independent vectors.
(b)	<b>Partial Differentiation-</b> Partial Differentiation; Partial derivatives of first and higher order. Total differentials, differentiation of composite and implicit functions. Euler's theorem on homogeneous functions with two and three independent variables. Deductions from Euler's Theorem
(c)	Applications of Partial Differentiation, Expansion of Functions, Maxima and Minima of function of two independent variables, Jacobian, Taylor's Theorem and Taylor's series, Maclaurin's series.
(d)	Linear Differential Equations with Constant Coefficients and Variable Coefficients of Higher Order – Linear Differential Equation with constant coefficients – complementary function, particular integrals of differential equation, Cauchy's homogeneous linear differential equation and Legendre's differential equation, Method of variation of parameters.
(e)	Differentiation under Integral sign, Numerical Integration - Differentiation under Integral sign with constant limits of integration, Numerical Integration by (a) Trapezoidal (b) Simpson's 1/3 <sup>rd</sup> (c) Simpson's 3/8 <sup>th</sup> rule.
(f)	Double Integration – Change the order of integration, Evaluation of double integrals by changing the order of integration and changing to polar form.
(g)	Triple Integration and Application of Multiple Integrals – Application of double Integrals to compute Area, Mass, Volume. Application of triple integral to compute volume.
<b>4.2</b>	<b>Engineering Mechanics -</b>
(a)	System of Coplanar Forces – Resultant of concurrent forces, parallel forces & Non concurrent Non parallel system of forces. Moment of force about a point, Couples, Varignon's theorem, Distributed forces in plane, Centroid and Centre of Gravity, Moment of Inertia & its theorem.
(b)	Condition of equilibrium for concurrent forces, Parallel forces and Non concurrent Non parallel general system of forces & couples. Types of supports, loads, beams. Analysis of trusses.
(c)	Laws of friction, Cone of friction, Equilibrium of bodies on inclined plane. Application of problems involving wedges, ladders, Screw friction.
(d)	Kinematics of particle: - Velocity and acceleration in terms of rectangular coordinate system, Rectilinear motion, Motion along plane curved path, Tangential and Normal components of acceleration. Motion Curves (a-t, v-t, s-t curves), Projectile motion. Relative motion. Newton's second law of Motion, principle of work & energy, D'Alembert's principles, equation of dynamic equilibrium. Moment of Energy principles: Linear momentum, principle of conservation of momentum, Impact of solid bodies, direct and oblique impact, impact of solid bodies, semi elastic impact and plastic impact.
<b>4.3</b>	<b>Elements of Civil Engineering</b>
(a)	<b>Materials and Construction –</b>
(1)	Use of basic materials cement, bricks, stone, natural and artificial sand, Reinforcing Steel-Mild, Tor and High tensile Steel. Concrete Types – PCC, RCC, Pre-stressed and Precast. Introduction to smart materials. Recycling of materials.

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अ. क्र	विषय
(2)	Substructure – Function of foundations, (Only concepts of settlement and Bearing capacity of soils). Types of shallow foundations, (only concept of friction and bearing pile).
(3)	Superstructure – Types of loads:- DL and LL, wind loads, earthquake considerations. Types of construction– Load bearing, framed, composite. Fundamental requirements of masonry.
(4)	Introduction to automation in construction:- Concept, need, examples related to different civil engineering projects.
(b)	<b>Uses of maps and field surveys -</b>
(1)	Various types of maps and their uses. Principles of surveys. Modern survey method using levels, Theodolite, EDM, lasers, total stations and GPS. Introduction to digital mapping. Measuring areas from maps using digital planimeter.
(2)	Conducting simple and differential levelling for seeking out various benchmarks, determining the elevation of different points and preparation of contour maps. Introduction to GIS Software and other surveying software's with respect to their capabilities and application areas.
<b>4.4</b>	<b>Elements of Mechanical Engineering</b>
(1)	Thermodynamics - Thermodynamic work, p-dv work in various process, p-v representation of various thermodynamic processes and cycles. Ideal gas equation, properties of pure substance, Statements of Ist and IInd law of thermodynamics and their applications in mechanical engineering. Carnot cycle for Heat engine, refrigerator and heat pump.
(2)	Heat transfer – Statement and explanation of Fourier’s Law of heat conduction, Newton’s law of cooling, and Stefan Boltzmann’s law. Conducting and insulation materials and their properties. Selection of heat sink and heat source.
(3)	Power plants – Thermal, Hydro-electric, nuclear and solar wind hybrid power plants
(4)	Machine elements: Power transmission shafts, axles, keys, bush and ball bearings, Flywheel and Governors.
(5)	Power Transmission Devices – Types of belts and belt drives, Chain drives, type of gears, Types of couplings, friction clutch (cone and single plate), brakes (types and application only). Application of these devices.
(6)	Mechanism : (Descriptive treatment only) Slider crank mechanism, Four bar chain mechanism, List of various inversions of four bar chain mechanism, Geneva mechanism, Ratchet and Pawl mechanism.
(7)	Materials use in Engineering and their Application Metals – Ferrous and Non-ferrous, Non metallic materials, Material selection criteria, Design consideration, Steps in Design.
(8)	Introduction to Manufacturing processes and Their Applications – Casting, Sheet metal forming, Sheet-metalcutting, Forging Fabrication, Metal joining processes.
(9)	Machine Tools (Basic elements, Working principle and types of operations) Lathe Machine – Centre Lathe Drilling Machine – Study of pillar drilling machine. Introduction to NC and CNC machine, grinding machine, Power saw, Milling Machine.
<b>4.5</b>	<b>Elements of Electrical Engineering</b>
(1)	D.C. circuits: Kirchhoff’s laws, ideal and practical voltage and current source, Mesh and nodal analysis (super node and super mesh excluded), Source transformation, Star-delta transformation, Super position theorem, Thevenin’s theorem, Norton’s theorem, Maximum power transfer theorem.

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अ. क्र	विषय
(2)	A.C. Circuits : Generation of alternating voltage and current, RMS and average value, form factor, crestfactor, AC through resistance, inductance and capacitance, R-L, R-C, and R-L-C series and parallel circuits, phasor diagrams, power and power factor, series and parallel resonance, Q-factor and bandwidth
(3)	Three phase circuits : Three phase voltage and current generation, star and delta connections (balanced load only), relationship between phase and line currents and voltages, Phasor diagrams, Basic principle of wattmeter, measurement of power by two wattmeter method.
(4)	Single phase transformer : Construction, working principle, Emf equation, ideal and practical transformer, transformer on no load and on load, phasor diagrams, equivalent circuit, O.C. and S.C. test, Efficiency.
<b>4.6</b>	<b>Basic Computer Engineering</b>
(1)	Principles of Object-Oriented Programming Elements of computer systems, DOS Commands & Linux environment, Language Processors, Object-Oriented Programming Paradigm and benefits, Applications of OOP
(2)	Object-Oriented Systems Development Object-Oriented Analysis: static and dynamic modeling, and Design: class design and algorithm design, case studies.
(3)	Beginning with C++ Tokens, Expressions, Control Structures, Array, Functions, Structures and Unions
(4)	Class and Objects Specifying a Class, Defining Member Functions, Private Member Functions, Static Data and Member Functions, Arrays of Objects, Friend Functions.
(5)	Working with Files Classes for File Stream Operations and I/O stream operation, Opening and Closing a File, Detecting end-of-file, more about Open(): File Modes, Sequential Input and Output operations.
(6)	Introduction to Graphics and data structures Primitive operations, basic operations, line function, circle, ellipse, rectangle, font, color, text, Introduction to data structure and application, searching and sorting.

२. नगरपरिषद अभियांत्रिकी सेवा (श्रेणी क नगरपरिषद कर्मचा-यासाठीची पदे) संयुक्त पूर्व परीक्षा

प्रश्नपत्रिका : एक.

विषय	प्रश्न संख्या	गुण	दर्जा	माध्यम	कालावधी	प्रश्नपत्रिकेचे स्वरूप
मराठी	१०	१०	दहावी	मराठी	दीड तास	वस्तुनिष्ठ बहुपर्यायी
इंग्रजी	१०	१०	दहावी	इंग्रजी		
सामान्य अध्ययन (General Studies)	२०	२०	दहावी	मराठी व इंग्रजी		
Engineering Aptitude Test ( Diploma Level ) अभियांत्रिकी अभियोग्यता चाचणी (पदविका स्तर)	६०	६०	अभियांत्रिकी की पदविका	इंग्रजी		
	१००	१००				

अभ्यासक्रम

नगरपरिषद अभियांत्रिकी सेवा (श्रेणी क नगरपरिषद कर्मचा-यासाठीची पदे) संयुक्त पूर्व परीक्षा अभ्यासक्रम	
अ. क्र	विषय
१.	<p><b>मराठी:</b></p> <p>सर्वसामान्य शब्दसंग्रह, वाक्यरचना, व्याकरण, म्हणी व वाक्यप्रचार यांचा अर्थ आणि उपयोग तसेच उताऱ्यावरील प्रश्नांची उत्तरे</p>
	<p><b>Marathi :</b></p> <p>सर्वसामान्य शब्दसंग्रह ,व्याकरण ,वाक्यरचना , म्हणी व वाक्यप्रचार यांचा अर्थ आणि उपयोग तसेच उताऱ्यावरील प्रश्नांची उत्तरे,</p>
२.	<p><b>इंग्रजी:</b></p> <p>Common Vocabulary, Sentence Structure, Grammar, Use of Idioms and phrases &amp; their meaning and comprehension of passage.</p>
	<p><b>2 English:</b></p> <p>Common Vocabulary, Sentence Structure, Grammar, Use of Idioms and phrases &amp; their meaning and comprehension of passage.</p>
३	<p><b>सामान्य अध्ययन</b></p>
	<p><b>General Studies</b></p>
३.१	<p>भारताचा विशेषतः महाराष्ट्राचा इतिहास</p>
	<ul style="list-style-type: none"> <li>Indian History with special reference to Maharashtra</li> </ul>
३.२	<p>भारताचा विशेषतः महाराष्ट्राचा भूगोल</p>
	<ul style="list-style-type: none"> <li>Indian Geography with special reference to Maharashtra</li> </ul>
३.३	<p><b>भारतीय अर्थव्यवस्था</b></p> <ul style="list-style-type: none"> <li>भारतीय आयात निर्यात -</li> </ul>
	<p><b>Indian Economy</b></p> <ul style="list-style-type: none"> <li>Indian Imports – Exports</li> </ul>

नगरपरिषद अभियांत्रिकी सेवा (श्रेणी क नगरपरिषद कर्मचा-यासाठीची पदे) संयुक्त पूर्व परीक्षा अभ्यासक्रम	
अ. क्र	विषय
	<ul style="list-style-type: none"> <li>राष्ट्रीय विकासात सरकारी ,सहकारी , ग्रामीण बँकांची भूमिका</li> <li>शासकीय अर्थव्यवस्था - अर्थसंकल्प लेखा ,लेखापरीक्षण इत्यादी</li> <li>किंमती वाढण्याची कारणे व उपाय</li> </ul>
३.४	<p>भारतीय राज्य व्यवस्था :-</p> <ul style="list-style-type: none"> <li>भारताच्या घटनेचा प्राथमिक अभ्यास,</li> <li>संसद व राज्य विधान मंडळ इ.</li> <li>राज्य व्यवस्थापन (प्रशासन)</li> <li>ग्रामीण व शहरी प्रशासन</li> </ul>
३.५	<p>चालु घडामोडी- जागतिक व भारतासंबंधी</p>
४	<p>Indian Political System :-</p> <ul style="list-style-type: none"> <li>Indian Polity &amp; Constitution</li> <li>Parliament, state assembly etc.</li> <li>State administration</li> <li>Rural and urban administration</li> </ul>
४	<p>Current Affairs related to India and World,</p>
४	<p><b>Engineering Aptitude Test ( Diploma Level)</b> अभियांत्रिकी अभियोग्यता चाचणी (पदविका स्तर)</p>
1	<p><b>Basic laws of Electricity.</b> Various uses &amp; effects of Electricity. Fuse &amp; relays etc. Principle of Generation of Electricity. Transformers. Basics of DC and AC (both single phase &amp; three phase) machine.</p>
2	<p><b>Basic Electronics:</b> Basics of Rectifiers, filters, amplifiers, Modulators and demodulators, Basic Digital Electronics. Solid State Physics, Semi-conductor, Diodes. Transistors</p>
3	<p><b>Basics of Computers and applications:</b> Architecture of Computers; input &amp; output devices; Operating system like Windows, Unix, Linux, MS-Office, Concept of High level, assembly level and low level programming language , Assembler, Interpreter and compiler, Various data representation, Binary Algebra, Internet and Email: Websites &amp; Web browsers; Computer viruses</p>
4	<p><b>Maths-</b> Basic of Trigonometry, Basic of cordinal Geometry, Mansurations of different figure such as trangels, square, cubiod, polynomial, cylinder, cone and sphere , Basic of probability and statistics'</p>
5	<p><b>Science :</b> Units and measurement basic electricity and semi conductors chemical bonding and catalysis, mental corrosion and its prevention and electro chemistry</p>
6	<p>Basic Concept Of Engineering Graphics</p>

३. नगरपरिषद प्रशासकीय व लेखा सेवा (सर्वसाधारण) संयुक्त पूर्व परीक्षा

प्रश्नपत्रिका : एक

विषय	प्रश्नांची संख्या	एकूण गुण	दर्जा	माध्यम	परीक्षेचा कालावधी	प्रश्नपत्रिकेचे स्वरूप
सामान्य क्षमता चाचणी	१००	१००	पदवी	मराठी व इंग्रजी	दीड तास	वस्तुनिष्ठ बहुपर्यायी

अभ्यासक्रम:

नगरपरिषद प्रशासकीय व लेखा सेवा (सर्वसाधारण) संयुक्त पूर्व परीक्षा अभ्यासक्रम		
अ.क्र.	विषय	Subjects
(१)	<b>चालू घडामोडी-</b> जागतिक तसेच भारतातील	<b>Current events India &amp; World</b>
(२)	<b>नागरिकशास्त्र-</b> भारताच्या घटनेचा प्राथमिक अभ्यास, राज्य व्यवस्थापन (प्रशासन) , नागरी व्यवस्थापन (प्रशासन)	<b>Civics :</b> Primary study of Indian Constitution , State Administration , Urban administration
(३)	आधुनिक भारताचा विशेषतः महाराष्ट्राचा इतिहास	<b>Modern History</b> of India with special reference to Maharashtra
(४)	<b>भूगोल (महाराष्ट्राच्या भूगोलाच्या विशेष अभ्यासासह)</b> पृथ्वी, जगातील विभाग, हवामान, अक्षांश, महाराष्ट्रातील जमिनीचे प्रकार, पर्जन्यमान, प्रमुख पिके, नद्या, उद्योगधंदे , इत्यादी.	<b>Geography Special reference to Maharashtra :</b> Earth , Different parts of world, Climatic zones in world , climate , Latitudes and Longitudes, Types of soils in maharashtra , Rainfall ,Important crops , Rivers , Industries etc
(५)	<b>अर्थव्यवस्था-</b> भारतीय अर्थव्यवस्था- राष्ट्रीय उत्पन्न शेती, उद्योग, परकीय व्यापार, बँकिंग, लोकसंख्या, दारिद्र्य व बेरोजगारी, मुद्रा आणि राजकोषीय नीति, इत्यादी शासकीय अर्थव्यवस्था- अर्थव्यवस्था-अर्थसंकल्प, लेखा, लेखापरीक्षण, इत्यादी	<b>Economics Related to India National GDP, GNP, and Industry etc. India's Export-Import, Banking, Demography, poverty and unemployment, Fiscal and monetary policy, budget, accounting and auditing India's Economic administration and Set-up</b>
(६)	<b>सामान्य विज्ञान-</b> भौतिकशास्त्र, (Physics) रसायनशास्त्र (Chemistry) वनस्पतीशास्त्र (Zoology) वनस्पतीशास्त्र (Botany) आरोग्यशास्त्र (Hygiene)	<b>General Science</b> Physics Chemistry Zoology Botany Hygiene,
(७)	<b>बुद्धीमापन चाचणी</b> - उमेदवार किती लवकर व अचूकपणे विचार करू शकतो हे आजमावण्यासाठी प्रश्न <b>अंकगणित</b> - बेरीज, वजाबाकी , गुणाकार , भागाकार, दशांश , अपूर्णांक व टक्केवारी.	<b>General Mental Ability :</b> Questions will check how fast and accurate a candidate can think. <b>Numerical Ability:</b> Summation, Subtraction, Multiplication, Division, Decimals, Fractions, Percentage



४. नगरपरिषद प्रशासकीय व लेखा सेवा (श्रेणी क नगरपरिषद कर्मचा-यासाठीची पदे) संयुक्त पूर्व परीक्षा

प्रश्नपत्रिका : एक

विषय	प्रश्नांची संख्या	एकूण गुण	दर्जा	माध्यम	परीक्षेचा कालावधी	प्रश्नपत्रिकेचे स्वरूप
सामान्य क्षमता चाचणी	१००	१००	पदवी	मराठी व इंग्रजी	दीड तास	वस्तुनिष्ठ बहुपर्यायी

अभ्यासक्रम:

नगरपरिषद प्रशासकीय व लेखा सेवा (श्रेणी क नगरपरिषद कर्मचा-यासाठीची पदे) संयुक्त पूर्व परीक्षा अभ्यासक्रम		
अ.क्र.	विषय	Subjects
(१)	चालू घडामोडी- जागतिक तसेच भारतातील	1. <b>Current events India &amp; World</b>
(२)	नागरिकशास्त्र- भारताच्या घटनेचा प्राथमिक अभ्यास, राज्य व्यवस्थापन (प्रशासन) , नागरी व्यवस्थापन (प्रशासन)	<b>Civics</b> : Primary study of Indian Constitution , State Administration , Urban administration
(३)	आधुनिक भारताचा विशेषतः महाराष्ट्राचा इतिहास	3. <b>Modern History of India</b> with special reference to Maharashtra
(४)	भूगोल (महाराष्ट्राच्या भूगोलाच्या विशेष अभ्यासासह) पृथ्वी, जगातील विभाग, हवामान, अक्षांश, महाराष्ट्रातील जमिनीचे प्रकार, पर्जन्यमान, प्रमुख पिके, नद्या, उद्योगधंदे , इत्यादी.	4. <b>Geography Special reference to Maharashtra</b> : Earth , Different parts of world, Climatic zones in world , climate , Latitudes and Longitudes, types of soils in Maharashtra , Rainfall , Important crops , Rivers , Industries etc
(५)	अर्थव्यवस्था- भारतीय अर्थव्यवस्था- राष्ट्रीय उत्पन्न शेती, उद्योग, परकीय व्यापार, बँकिंग, लोकसंख्या, दारिद्र्य व बेरोजगारी, मुद्रा आणि राजकोषीय नीति, इत्यादी शासकीय अर्थव्यवस्था- अर्थव्यवस्था-अर्थसंकल्प, लेखा, लेखापरीक्षण, इत्यादी	5. <b>Economics Related to India</b> National GDP, GNP, and Industry etc. India's Export-Import, Banking, Demography, poverty and unemployment, Fiscal and monetary policy, budget, accounting and auditing India's Economic administration and Set-up
(६)	सामान्य विज्ञान- भौतिकशास्त्र, (Physics) रसायनशास्त्र (Chemistry) वनस्पतीशास्त्र (Zoology) वनस्पतीशास्त्र (Botany) आरोग्यशास्त्र (Hygiene)	6. <b>General Science</b> Physics Chemistry Zoology Botany Hygiene,

(9)	<p><b>बुद्धीमापन चाचणी</b> - उमेदवार किती लवकर व अचूकपणे विचार करू शकतो हे आजमावण्यासाठी प्रश्न</p> <p><b>अंकगणित</b> - बेरीज, वजाबाकी ,गुणाकार , भागाकार, दशांश , अपूर्णांक व टक्केवारी.</p>	<p><b>General Mental Ability :</b> Questions will check how fast and accurate a candidate can think <b>and</b></p> <p><b>Numerical Ability:</b> Summation, Subtraction, Multiplication, Division, Decimals, Fractions, Percentage</p>
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१. महाराष्ट्र नगरपरिषद स्थापत्य अभियांत्रिकी सेवा (सर्वसाधारण) मुख्य परीक्षा

प्रश्नपत्रिकांची संख्या:- एक

विषय	गुण	प्रश्न संख्या	दर्जा	माध्यम	कालावधी	प्रश्नपत्रिकेचे स्वरूप
मुख्य परीक्षा पेपर	१५०	१५०	स्थापत्य अभियांत्रिकी पदवी (B.E. Civil)	इंग्रजी	दोन तास	वस्तुनिष्ठ बहुपर्यायी

अभ्यासक्रम

महाराष्ट्र नगरपरिषद स्थापत्य अभियांत्रिकी सेवा (सर्वसाधारण) मुख्य परीक्षा अभ्यासक्रम	
Sr. No.	Topics
1.	<b>Building Construction &amp; Materials:</b> Properties of wet and hardened concrete, tests on concrete, factors affecting strength of concrete, water-cement ratio, aggregate-cement ratio, mix design, additives, design of form work, types of formwork. Stones, bricks, cements, lime, mortar, timber, plastic, concrete, steel, paints and varnishes. Principles of building planning and design, integrated approach, building byelaws, building services such as vertical transportation, water supply sanitation, thermal ventilation, lighting, acoustics, fire protection, electrical fittings. Foundations, stones, brick and block masonry, steel and reinforced cement concrete structures, floors, doors and windows, roofs, finishing works, water proofing.
2.	<b>Strength of materials:</b> Stresses, strains, principal stresses, bending moments, shear forces and torsion theory, bending theory of beam, deflection of beam, theories of buckling of columns.
3.	<b>Theory of structures:</b> Analysis of beams, frames and trusses, slope deflection method, moment distribution method.
4	<b>Structural analysis:</b> Analysis of arches and suspension cables, influence lines, stiffness and flexibility matrix methods.
5	<b>Steel structures:</b> Design of bolted and welded connections, columns, footings, trusses, steel beams, plate girders.
6	<b>Design of reinforced concrete structures (Working stress and limit state):</b> Design of slab, beams, columns, footing. Retaining walls, tanks, building frames, staircases.
7	<b>Pre-stressed Concrete:</b> Principles of pre-stressing, materials used and their properties, permissible stresses as per I.S. codes, systems of pre-stressing, losses in pre-stress, design of pre-tensioned and post-tensioned beams- simply supported, rectangular and T- beams, cable profile, end block design, bridge girder.
8	<b>Construction Planning and Management:</b> Elements of scientific management, elements of material management, safety engineering, network analysis, construction

	equipment, site layout, quality control.
<b>9</b>	Computer-aided analysis and design of structures, application of computer programming to structures. numerical methods such as- i. Finding area by Simpson's rule, trapezoidal rule; ii. Finding root of an equation by a) Newton-Raphson techniques b) Bisection method iii. Solution of simultaneous equations by a) Gauss elimination method, b) Gauss- Jordan method, c) Iteration method.
<b>10</b>	<b>Surveying:</b> Classification of surveys, measurement of distances-direct and indirect methods, optical and electronic devices, prismatic compass, local attraction; plane table surveying, levelling, calculations of volumes, contours, theodolite, theodolite traversing, omitted measurements, trigonometric levelling, tacheometry, curves, photogrammetry, geodetic surveying, hydrographic surveying.
<b>11</b>	<b>Estimating, Costing and Valuation:</b> Specification, estimation, costing, tenders and contracts, rate analysis, valuation
<b>12</b>	<b>Geo-technical Engineering:</b> Geotechnical properties, stresses in soil, shear resistance, compaction, consolidation and earth pressure, stability of slopes, bearing capacity, settlements, shallow and deep foundations, cofferdams, ground water control.
<b>13</b>	<b>Fluid Mechanics:</b> Properties of fluids, fluid statics and buoyancy, kinematics and dynamics, flow measurement, flow in open channel, flow in closed conduits, dimensional and model analysis, losses in pipe flow, siphon, water hammer, boundary layer and control, pipe network.
<b>14</b>	<b>Fluid Machines:</b> Hydraulic turbines, centrifugal pumps, reciprocating pumps, power house, classification and layout.
<b>15</b>	<b>Engineering Hydrology:</b> Hydrological cycle, precipitation, evaporation, infiltration, runoff, hydrographs, reservoir planning & sediment control, floods, flood routing, ground water.
<b>16</b>	<b>Highway Engineering:</b> Planning of highway systems, alignment and geometric design, horizontal and vertical curves, grade separation, materials and different surfaces and maintenance, rigid and flexible pavement, traffic engineering.
<b>17</b>	<b>Bridge Engineering:</b> Selection of site, types of bridges, discharge, waterway, spans, afflux, scour, standards, specifications, loads and forces, erection of superstructure, strengthening.
<b>18</b>	<b>Tunnelling:</b> Open cuts, surveys, criteria for selection of size and shapes, driving in soft and hard grounds, mucking, dust control, ventilation, lighting and drainage, special methods of tunnelling.
<b>19</b>	<b>Environmental Engineering</b>

a.	<b>Water Supply Engineering:</b> Sources of supply, design of intakes, estimation of demand, water quality standards, primary and secondary treatment, maintenance of treatment units, conveyance and distribution of treated water, rural water supply.
b.	<b>Waste Water Engineering &amp; Pollution control:</b> Quantity, collection and conveyance and quality, disposal, design of sewer and sewerage systems, pumping, characteristics of sewage and its treatment, rural sanitation, sources and effects of air and noise pollution, monitoring, standards
c.	<b>Solid Waste Management:</b> Sources, classification, collection and disposal.

२ महाराष्ट्र नगरपरिषद विद्युत अभियांत्रिकी सेवा (सर्वसाधारण) मुख्य परीक्षा

प्रश्नपत्रिकांची संख्या:- एक

विषय	गुण	प्रश्नसंख्या	दर्जा	माध्यम	कालावधी	प्रश्नपत्रिकेचे स्वरूप
मुख्य परीक्षा पेपर	१५०	१५०	विद्युत अभियांत्रिकी पदवी (B.E. Electrical)	इंग्रजी	दोन तास	वस्तुनिष्ठ बहुपर्यायी

अभ्यासक्रम

महाराष्ट्र नगरपरिषद विद्युत अभियांत्रिकी सेवा (सर्वसाधारण) मुख्य परीक्षा अभ्यासक्रम	
Sr. No.	Topic
1.	Work, Power and Energy, Resistance, capacitance and inductance, DC circuits, KCL, KVL, Network theorems, fundamentals, RL, RC and RLC circuits, Steady state and transient responses. Series and parallel AC circuits, Three phase circuits, Power calculation in balanced and unbalanced circuits, Linear and non linear loads.
2.	Basics of electromagnetic and electro static, series and parallel magnetic circuits, energy stored in fields, types, construction, operation of single and three phase transformers, equivalent circuit and phasor, diagrams, OC and SC tests, regulation and efficiency calculation, parallel operation, field tests before commissioning.
3.	Fundamentals of energy conversion, Construction and theory of DC machine, DC generator characteristics, Starting, braking and speed control of DC motors, Application of DC machines.
4.	Principle, types, performance characteristics, starting and speed control of single phase and three phase induction motors, Equivalent circuits, phasor diagrams, applications. VFD for induction motors. Energy saving opportunities in using VFD.
5.	Principle, types of synchronous motors, performance characteristics, starting and speed control of single phase and three phase synchronous motors, Equivalent circuits, phasor diagrams, applications. VFD for synchronous motors.
6.	Analog and Digital electronics fundamentals, devices and characteristics, amplifier and oscillator circuits, Operational amplifier, Gates, flip-flops, Combinational and sequential circuits, ADC and DACs.
7.	Sensors and transducers, Performance characteristics of measuring instruments, instrument transformers, measurement of physical parameters such as pressure, force, temperature, flow, vibration, torque, etc. Principles of feedback, transfer function, block diagram, steady state error, Steady state and transient specifications, Bode plot, Nyquist plot and Root locus, Relative and absolute Stability considerations.
8.	Power Devices- Types, Characteristics of various power electronic devices, Triggering and protection circuits, Controlled and uncontrolled rectification, DC to DC converters, DC to AC conversion, modulation techniques, SPWM. Fundamentals of electric drives, 4 quadrant operation, theory and analysis of DC drives, converter and chopper fed DC drives, Voltage, frequency and V/F controlled drives, slip power recovery schemes, fundamentals of wind power

	generation and grid interface.
<b>9.</b>	Power generation in India and Maharashtra, Renewable Generation, Various types of power plant, major equipment in power plants, Major issues with wind and solar power generation and grid interface. Steady state performance of overhead transmission lines and cables, per unit quantities, Bus admittance and impedance matrices, symmetrical components.
<b>10.</b>	Calculation of sag and tension in transmission of lines, Analysis symmetrical and unsymmetrical faults, principle of active and reactive power transfer and distribution. Load flow studies, steady state and transient stability, voltage stability, voltage control, economic load dispatch, load frequency control in power systems.
<b>11.</b>	Principle of circuit breaking, arc extinction and arc interruption for AC and DC breaker, Various types of circuit breakers and their applications, Ratings of breakers, isolators and major HV switchgear.
<b>12.</b>	Principle of over current, earth fault, differential, and distance protection. Concepts of solid state and numeric relays. Protection of generator, transformer, transmission lines, substation, busbar, induction motors. Various LT switchgear devices such as MCCB, ELCB.
<b>13.</b>	Specification of impulse wave, multistage impulse generator, insulation coordination, Routine and type tests for cables and transformers, Lightning protection, Early emission arrestors. Power quality issues, Reactive and harmonic compensation, FT devices and their applications, Passive and Active filters, HVDC transmission.
<b>14.</b>	Energy scenario in India, Energy policies, pricing and reforms, Energy conservation Act, 2001, Electricity Act, 2003. Energy management objectives, Electricity billing, electrical load management and MD control, Tariffs, PF improvements and benefits.
<b>15.</b>	Basic terms in lighting systems and features, lamp types and their features, Recommended illumination levels for various tasks, methodology of lighting system energy efficiency study, Illumination system design for residential, commercial, industrial categories. Solar powered illumination and economics associated.
<b>16.</b>	DG set selection and installation factors, Operational features, Energy performance assessment of DG sets, Energy saving majors for DG sets, Synchronization of DGs with utility supply. Parallel operation. UPS technology, types and specifications, Performance assessment.
<b>17.</b>	Pump types and characteristics, Pump curves, Factors affecting pump performance, Efficient pumping system operation, and Energy conservation in pumping systems. Fan and compressor types, Fan and compressor performance evaluation and efficient system operation, Compressor capacity assessment, Energy saving opportunities in fans and compressors.
<b>18.</b>	HVAC and refrigeration system, Types of refrigeration system, Common refrigerants and properties, Compressor type and applications, Selection of suitable refrigeration system, Factors affecting performance and energy efficiency of refrigeration plants, Energy saving opportunities.
<b>19.</b>	Underground cable and cable accessories, cable in underground structure, cable installation in conduit, cable joints, cable fault detection, over-current protection and lightning protection of underground systems, operation and maintenance of

	underground system. Grounding systems, Equipment, Ground fault protection, Isolated neutral grounding, Grounding for hazardous locations, substation, and tower grounding.
<b>20.</b>	Substation design, bus designs, substation layout, grounding and ground grid design, substation structures, major substation equipment, auxiliary equipment, substation automation, Commissioning and start up. Industrial, residential and commercial wiring, electrical system design, design and audio and video systems, Lifts and Elevator systems, safety norms and codes. Fire fighting apparatus and systems.



### ३ महाराष्ट्र नगरपरिषद संगणक अभियांत्रिकी सेवा (सर्वसाधारण) मुख्य परीक्षा

प्रश्नपत्रिकांची संख्या:- एक

विषय	गुण	प्रश्न संख्या	दर्जा	माध्यम	कालावधी	प्रश्नपत्रिकेचे स्वरूप
मुख्य परीक्षा पेपर	१५०	१५०	संगणक अभियांत्रिकी पदवी (B.E. Computer)	इंग्रजी	दोन तास	वस्तुनिष्ठ बहुपर्यायी

अभ्यासक्रम

महाराष्ट्र नगरपरिषद संगणक अभियांत्रिकी सेवा (सर्वसाधारण) मुख्य परीक्षा अभ्यासक्रम	
Sr. No.	Topic
Section 1	Digital Logic
	Boolean algebra, Combinational and sequential circuits, Minimization, Number representations and computer arithmetic (fixed and floating point).
Section 2	Computer Organization and Architecture
	Machine instructions and addressing modes. ALU, data-path and control unit. Instruction pipelining, Memory hierarchy, Cache, Main memory and secondary storage, I/O interface (interrupt and DMA mode).
Section 3	Programming and Data Structures
	Programming in C, Recursion, Arrays, stacks, queues, linked lists, trees, and binary search trees, binary heaps, graphs, Object oriented concepts.
Section 4	Algorithms
	Searching, sorting, hashing, Asymptotic worst case time and space complexity. Algorithm design techniques: greedy, dynamic programming and divide-and-conquer. Graph Search, minimum spanning trees, shortest path
Section 5:	Theory of Computation
	Regular expressions and finite automata. Context-free grammars and push-down automata. Regular and context-free languages, pumping lemma. Turing machines and undecidability.
Section 6:	Compiler Design
	Lexical analysis, parsing, syntax-directed translation. Runtime environments. Intermediate code generation.
Section 7:	Operating System
	Processes, threads, inter-process communication, concurrency and synchronization. Deadlock, CPU, Scheduling, Memory Management and virtual memory, File Systems
Section : 8	Databases
	ER-model. Relational model: relational algebra, tuple calculus, SQL. Integrity constraints, normal forms. File organization, indexing (e.g., B and B+ trees). Transactions and concurrency control.
Section 9 :	Computer Networks
	Concept of layering. LAN technologies (Ethernet). Flow and error control techniques, switching. IPv4 / IPv6, routers and routing algorithms (distance vector, link state). TCP/UDP and sockets, congestion control. Application layer protocols (DNS, SMTP, POP, FTP, HTTP). Basics of Wi-Fi. Network security: authentication, basics of public key and private key cryptography, digital signatures and certificates, firewalls. Hash Functions

४. महाराष्ट्र नगरपरिषद पाणीपुरवठा , जलनिस्सारण व स्वच्छता अभियांत्रिकी सेवा (सर्वसाधारण) मुख्य परीक्षा

प्रश्नपत्रिकांची संख्या:- एक

विषय	गुण	प्रश्न संख्या	दर्जा	माध्यम	कालावधी	प्रश्नपत्रिके चे स्वरूप
मुख्य परीक्षा पेपर	१५०	१५०	यांत्रिकी / पर्यावरण अभियांत्रिकी पदवी (B.E. Mechanical /Environment)	इंग्रजी	दोन तास	वस्तुनिष्ठ बहुपर्यायी

अभ्यासक्रम

महाराष्ट्र नगरपरिषद पाणीपुरवठा , जलनिस्सारण व स्वच्छता अभियांत्रिकी सेवा (सर्वसाधारण) मुख्य परीक्षा अभ्यासक्रम	
Sr. No.	Topic
1.	<b>Applied Thermodynamics –</b> Zeroth law of Thermodynamics, First law of Thermodynamics, Second law of Thermodynamics, calculation of work and heat in various processes; Second law of Thermodynamics; Thermodynamics property charts and tables, availability and irreversibility, Thermodynamic relations.
2.	<b>Fluid Mechanics and Turbomachinery –</b> Fluid definition and properties, Newton's Law of viscosity concept of continuum, Classification of fluid, Fluid statics, manometry, buoyancy, force of submerged bodies, stability of floating bodies, viscous flow of incompressible fluid, boundary layer, elementary turbulent flow, flow through pipes, head losses in pipes. Impulse and reaction principles, velocity diagrams, Pelton-wheel, Francis and Kaplan turbines.
3.	<b>Heat Transfer –</b> Modes of heat transfer; one dimensional heat conduction, resistance concept and electric analogy, heat transfer through fins; unsteady heat conduction, lumped parameter system, thermal boundary layer, dimensionless parameters in free and forced convective heat transfer, heat exchanger performance, LMTD and NTU methods; radiative heat transfer, Stefan Boltzmann's law.
4.	<b>Refrigeration and Air Conditioning.</b> Vapour and gas refrigeration and heat pump cycle; properties of moist air, psychrometric chart, basic psychrometric processes.
5.	<b>Internal Combustion Engine</b> Classification of I.C. Engine, circle Analysis of IC, SI, CI engines, Super charging/ Turbocharger Performance characteristics of SI and CI, Air pollution due to IC engine and its norms, engine fuels, engine lubricants, engine cooling, Introduction to CNG, LPG, wankle engines etc., Recent development in IC engine.
6.	<b>Power Plant Engineering</b> Thermal Power Plant- Analysis of steam cycle – Carnot, Rankine, Reheat cycle and

	<p>Regenerative cycle. Layout of Power Plant, layout of pulverized coal burners, fluidized bed combustion, coal handling system, ash handling system. Forced draught and induced draught fans, boiler feed pumps, super heater regenerators, condensers, boilers, de-aerators and Cooling towers.</p> <p>Hydro power plant – Rainfall, run off and its measurement hydrographs, flow duration curve, reservoir storage capacity, classification of plants – run off river plant, storage river plant, pump storage plant, layout of hydroelectric power plant.</p> <p>Nuclear Power Plant – Introduction of Nuclear Engineering, fission, fusion, nuclear materials, thermal fusion reactor and power plant – PWR, BWR, liquid metal fast</p>
7.	<p><b>Renewable Energy Sources</b></p> <p><b>a. Solar Energy</b> - Solar concentrators and tracking, Dish and Parabolic trough concentrating generating systems, Central tower solar power plants; Solar Ponds. Basic principle of power generation in a PV cell; Band gap and efficiency of PV cells, solar cells, characteristics, manufacturing methods of mono and poly-crystalline cells; Amorphous silicon thin film cells.</p> <p><b>b. Wind Energy</b> - Basic component of WEC, Type of wind turbine – HAWT, VAWT, Performance parameters of wind turbine, Power in wind, Wind electric generators, wind characteristics and site selection; wind farms for bulk power supply to grid.</p>
8.	<p><b>Strength of Materials</b></p> <p>Stress and Strain, Elastic Constants: Poission's Ratio, Modulus of elasticity, Modulus of rigidity, Bulk modulus, Shear Force and Bending Moment diagram, Deflection of Beams, Thin Cylindrical and Spherical Shells, Strain Energy, Torsion.</p>
9.	<p><b>Theory of Machines and Vibration</b></p> <p>Kinematics - Structure, Machine, Link and its types, Kinematics pairs, Kinematic chain and mechanism, Grubler's criteria, Inversions of kinematics chains, inversions of-four bar chain, single slider crank chain and double slider crank chain. Displacement, Velocity and acceleration analysis of plane mechanisms; dynamic analysis of linkages; cams; gears and gear trains; flywheels and governors; balancing of reciprocating and rotating masses; gyroscope.</p> <p>Free and forced vibration of single degree of freedom systems, effect of damping , vibration isolation, resonance critical speeds of shafts.</p>
10.	<p><b>Design of Machine Elements</b></p> <p>Design consideration in castings &amp; forgings, theories of failure, Design for static loadings, Design against fluctuating loads, Design of shafts, Design of springs, Design of belts.</p>
11.	<p><b>Materials Technology</b></p> <p>Strain Hardening, Constitution of Alloys, Iron-Carbon Equilibrium Diagram, Heat Treatment of Steels, Cast Irons, Introduction to International Standards/Codes, Non Ferrous Metals and Alloys, Fatigue Failure, Creep, Alloy Steels, Strengthening mechanism, Powder Metallurgy.</p>
12	<p>Environmental chemistry - chemistry involved in water and wastewater treatment, water and waste water parameters analysis procedures</p>
13	<p><b>Water Sources, water quality</b> -</p> <p>Physical, chemical and biological water quality and their prescribed standards standards, water borne diseases, water treatment - physical and chemical treatment process</p>
14	<p><b>Wastewater-</b></p>

	Characteristics and composition, sources, physical and chemical treatment operations and processes, biological treatment processes - anaerobic and anaerobic treatment system - their working principle and design
<b>15</b>	<b>Air pollution fundamentals -</b> sources, effects, standards, meteorology of air pollution, air quality managements, air quality monitoring, air pollution control systems, their working principles and design
<b>16</b>	<b>Solid waste-</b> Characteristics and composition, functional units of solid waste managements, solid waste treatment techniques, ultimate disposal
<b>17</b>	Environmental impact assessment (EIA), attributes of EIA, EIA procedure, environmental auditing, environmental clearance process, Environmental legislation – Salient features of The Air Act, 1981; Environment Act, 1986; Water Act, 1974; Wild Life Act, 1972 etc. and their salient features

५ महाराष्ट्र नगरपरिषद स्थापत्य अभियांत्रिकी सेवा (नप कर्मचारी) मुख्य परीक्षा

प्रश्नपत्रिकांची संख्या:- एक

विषय	गुण	प्रश्न संख्या	दर्जा	माध्यम	कालावधी	प्रश्नपत्रिकेचे स्वरूप
मुख्य परीक्षा पेपर	१५०	१५०	स्थापत्य अभियांत्रिकी पदवीका (Diploma in Civil Engineering)	इंग्रजी	दोन तास	वस्तुनिष्ठ बहुपर्यायी

अभ्यासक्रम

महाराष्ट्र नगरपरिषद स्थापत्य अभियांत्रिकी सेवा (नप कर्मचारी) मुख्य परीक्षा अभ्यासक्रम	
Sr. No.	Topic
1.	<b>Building Materials:</b> Physical and Chemical properties, Classification, Standard tests, Uses and manufacture/quarrying of materials e.g. building stones, silicate based materials, cement (Portland), Asbestos products, Timber and Wood based Products, laminates, bituminous materials, paints, varnishes.
2.	<b>Surveying:</b> Principles of surveying, working of prismatic compass and bearings, Plane table surveying, Theodolite traverse, Adjustment of theodolite, Levelling and contouring, Curvature, Refraction correction, Permanent adjustment of dumpy level, Methods of contouring and uses of a contour map, Tachometric survey.
3.	<b>Soil Mechanics:</b> Origin of soil phase diagram, Definitions - void ratio porosity, Degree of saturation, Water content specific gravity of soil grains and unit weights, Grain size distribution curves for different soil and their uses, Atterberg's limits, IS soil classification, Plasticity chart, Coefficient of permeability, Effective stress, Consolidation of soils.
4.	<b>Soil:</b> Calculation shear strength of soils, direct shear test, Vane shear test, Triaxial test, Soil compaction, Lab compaction Lab compaction test, Moisture content and bearing capacity of soils, Plate load test, and Standard penetration test.
5.	<b>Hydraulics:</b> Fluid properties, Hydrostatics, Measurements of flow, Bernoulli's theorem and its application, Flow through pipes, Flow in open channels, Weirs, Flumes, Spillways, Pumps and turbines.
6.	<b>Environmental Engineering:</b> Quality of water, Source of water supply, Purification of water, Distribution of water, Need of sanitation, Sewerage

	systems, Circular sewers, Oval sewer, Sewer appurtenances, Surface water drainage sewage treatments
7	<b>Concrete structures-</b> Working stress, limit state and Ultimate load design concepts, Designs of beams, slabs and columns
8	<b>Steel Structures-</b> working stress and limit state design concepts
9	<b>Solid Mechanics-</b> Bending moments and shear force in statically determine beams

६. महाराष्ट्र नगरपरिषद विद्युत अभियांत्रिकी सेवा (न प कर्मचारी) मुख्य परीक्षा

प्रश्नपत्रिकांची संख्या:- एक

विषय	गुण	प्रश्न संख्या	दर्जा	माध्यम	कालावधी	प्रश्नपत्रिकेचे स्वरूप
मुख्य परीक्षा पेपर	१५०	१५०	विद्युत अभियांत्रिकी पदवीका (Diploma in Electrical Engineering)	इंग्रजी	दोन तास	वस्तुनिष्ठ बहुपर्यायी

अभ्यासक्रम

महाराष्ट्र नगरपरिषद विद्युत अभियांत्रिकी सेवा (न प कर्मचारी) मुख्य परीक्षा अभ्यासक्रम:-	
Sr. No.	Topic
1.	<b>Basic Concepts:</b> Concepts of resistance, inductance, capacitance, and various factors affecting them. Concepts of current, voltage, power, energy and their units.
2.	<b>Circuit law:</b> Kirchoff's law, Simple Circuit solution using network theorems.
3.	<b>Magnetic Circuit:</b> Concepts of flux, mmf, reluctance, Different kinds of magnetic materials, Magnetic calculations for conductors of different configuration e.g. straight, circular, solenoidal, etc. Electromagnetic induction, self and mutual induction.
4.	<b>AC Fundamentals:</b> Instantaneous, peak, R.M.S. and average values of alternating waves, Representation of sinusoidal wave form, simple series and parallel AC Circuits consisting of R.L. and C, Resonance, Tank Circuit. Poly Phase system — star and delta connection, 3 phase power, DC and sinusoidal response of R-L and R-C circuit.
5.	<b>Measurement and measuring instruments:</b> Measurement of power (1 phase and 3 phase, both active and re-active) and energy, 2 wattmeter method of 3 phase power measurement. Measurement of frequency and phase angle. Ammeter and voltmeter (both moving Coil and moving iron type), extension of range wattmeter, Multimeters, Megger, Energy meter AC Bridges. Use of CRO, Signal Generator, CT, PT and their uses. Earth Fault detection.
6.	<b>Electrical Machines:</b> (a) D.C. Machine — Construction, Basic Principles of D.C. motors and generators, their characteristics, speed control and starting of D.C. Motors. Method of braking motor, Losses and efficiency of D.C. Machines. (b) 1 phase and 3 phase transformers — Construction, Principles of operation, equivalent circuit, voltage regulation, O.C. and S.C. Tests, Losses and efficiency. Effect of voltage, frequency and wave form on losses. Parallel operation of 1 phase /3 phase transformers. Auto transformers. (c) 3 phase induction motors, rotating magnetic field, principle of operation, equivalent circuit, torque-speed characteristics, and starting and speed control of 3 phase induction motors. Methods of braking, effect of voltage and frequency variation on torque speed characteristics.

महाराष्ट्र नगरपरिषद विद्युत अभियांत्रिकी सेवा (न प कर्मचारी) मुख्य परीक्षा अभ्यासक्रम:-	
Sr. No.	Topic
	Fractional Kilowatt Motors and Single Phase Induction Motors: Characteristics and applications.
7.	<b>Synchronous Machines</b> - Generation of 3-phase e.m.f. armature reaction, voltage regulation, parallel operation of two alternators, synchronizing, control of active and reactive power. Starting and applications of synchronous motors.
8.	<b>Generation, Transmission and Distribution</b> — Different types of power stations, Load factor, diversity factor, demand factor, cost of generation, interconnection of power stations. Power factor improvement, various types of tariffs, types of faults, short circuit current for symmetrical faults. Switchgears — rating of circuit breakers, Principles of arc extinction by oil and air, H.R.C. Fuses, Protection against earth leakage/ over current, etc. Buchholtz relay, Merz-Price system of protection of generators & transformers, protection of feeders and bus bars. Lightning arresters, various transmission and distribution system, comparison of conductor materials, efficiency of different system. Cable — Different type of cables, cable rating and derating factor.
9.	<b>Estimation and costing:</b> Estimation of lighting scheme, electric installation of machines and relevant IE rules. Earthing practices and IE Rules.
10.	<b>Utilization of Electrical Energy:</b> Illumination, Electric heating, Electric welding, Electroplating, Electric drives and motors.
11.	<b>Basic Electronics:</b> Working of various electronic devices e.g. P N Junction diodes, Transistors (NPN and PNP type), BJT and JFET. Simple circuits using these devices.



७ महाराष्ट्र नगरपरिषद संगणक अभियांत्रिकी सेवा (नप कर्मचारी) मुख्य परीक्षा

प्रश्नपत्रिकांची संख्या:- एक

विषय	गुण	प्रश्न संख्या	दर्जा	माध्यम	कालावधी	प्रश्नपत्रिकेचे स्वरूप
मुख्य परीक्षा पेपर	१५०	१५०	संगणक अभियांत्रिकी पदवीका (Diploma in Computer Engineering)	इंग्रजी	दोन तास	वस्तुनिष्ठ बहुपर्यायी

अभ्यासक्रम

महाराष्ट्र नगरपरिषद संगणक अभियांत्रिकी सेवा (नप कर्मचारी) मुख्य परीक्षा अभ्यासक्रम	
Sr. No.	Topic
1.	<b>PC Software:</b> MS-Windows, MS-Office
2.	<b>Computer Fundamentals:</b> Evolution of Computers, Hardware & Software, Internet
3.	<b>C Language:</b> Structure, Loop, Control Statements, Arrays, Pointers, functions, Structure and Union, files.
4.	<b>Computer organization:</b> Number systems, Logic Gates, flip-flops, Boolean Algebra, DMA, Instruction Sets.
5.	<b>Information Systems:</b> Information concepts, Hardware & Software, Overview of Communication systems, E-Commerce.
6.	<b>Data Structure using C / C++:</b> Object Oriented Programming, Data-Structures, Stack, Queue, Pointers, Linked list, Queue, Searching & Sorting Algorithms.
7.	<b>DBMS fundamentals:</b> Basic, Data Models, RDBMS, Relational Algebra, SQL, DDL, DML, and DCL statements, Creating Tables, Equi-Joins, self Joins, PL/SQL, Functions, Cursor and Triggers.
8.	<b>System Programming:</b> Assemblers, Loaders and Linkers, Macro Processors, Compilers.
9.	<b>Operating System Using LINUX:</b> Operating System, types, features & basic Architecture of Unix/Linux system, Unix File system & Structure, Linux commands for files and directories, Filters and pipes, process, Creating and editing files with VI editor, System administration, Role of system administrator, Managing user accounts.
10.	<b>Web Technologies and Programming:</b> Internet & Intranet, Hardware & software like Bus, Ethernet LAN, Routers, Gateways, Bridge, Switches, Subnet etc. Internet Service Provider, Backbones, NAPs, URL, Domain Names, Email, Web server and proxy server, Web caches, Web browser like internet Explorer, Internet Viruses. Internet security issues, firewall, Data Encryption, Digital signatures and certificates, Creating the website and home page, HTML programming basics, Syntax and rules, Search and search engine for internet, outlook express and front page.
11.	<b>Data and Network Communication:</b> Data Communication — Distributed processing network criteria, protocol and standards. Topologies etc. OSI model, layers. TCP/IP protocol. Digital to Digital Conversion, Digital to analog Conversion, Digital data transmission. Standards. Modems, Cable Modem. Transmission media - Guided & Unguided Media, Performance, Wave length:

	Multiplexing. DSL. Error detection and correction. VRC, LRC. CRC. Ethernet. Token Bus, Token Ring.
12.	<p><b>Java Programming:</b> JAVA and Internet: Support systems and environment; JVM; Data Type; program structure. Constants &amp; Variables. Type Casting; Operators.</p> <p>Class, Creating Objects, Class Members, Constructors, Overloading, Inheritance. Arrays. Creating Threads: Threads Class; Thread Methods; Thread Priority; Synchronization. Applets; Executable Applet, Adding Applet to HTML, File: passing Parameters to Applets.</p>
13.	<p><b>Software Engineering:</b></p> <p>Software Process - life cycle models; system engineering:</p> <p>Software Requirements - Functional and non-functional; prototyping; verification; validation.</p> <p>Design Concepts and Principles - design heuristic: architectural design; user interface design; system design; SCM process.</p> <p>Software testing - types of test; testing strategies; integration and validation testing system testing and debugging. Software Project Management - Measures and measurements; cost estimation; Task Network: Error Tracking; CASE tools.</p>

८. महाराष्ट्र नगरपरिषद पाणीपुरवठा , जलनिस्सारण व स्वच्छता अभियांत्रिकी सेवा (नप कर्मचारी) मुख्य परीक्षा

प्रश्नपत्रिकांची संख्या:- एक

विषय	गुण	प्रश्नसंख्या	दर्जा	माध्यम	कालावधी	प्रश्नपत्रिकेचे स्वरूप
मुख्य परीक्षा पेपर	१५०	१५०	यांत्रिकी / पर्यावरण अभियांत्रिकी पदवीका Diploma in Mechanical /Environment Engineering)	इंग्रजी	दोन तास	वस्तुनिष्ठ बहुपर्यायी

अभ्यासक्रम

महाराष्ट्र नगरपरिषद पाणीपुरवठा , जलनिस्सारण व स्वच्छता अभियांत्रिकी सेवा (नप कर्मचारी) मुख्य परीक्षा अभ्यासक्रम	
Sr. No.	Topic
1.	<b>Theory of Machines and Machine Design</b> Concept of simple machine, Four bar linkage and link motion, Flywheels and fluctuation of energy, Power transmission by belts — V-belts and Flat belts, Clutches — Plate and Conical clutch, Gears — Type of gears, gear profile and gear ratio calculation, Governors — Principles and classification, Riveted joint, Cams, Bearings, Friction in collars and pivots.
2.	<b>Engineering Mechanics and Strength of Materials</b> Equilibrium of Forces, Law of motion, Friction, Concepts of stress and strain, Elastic limit and elastic constants, Bending moments and shear force diagram, Stress in composite bars, Torsion of circular shafts, Buckling of columns — Euler's and Rankin's theories, Thin walled pressure vessels.
3.	<b>Thermal Engineering</b> Properties of Pure Substances : p-v & P-T diagrams of pure substance like H <sub>2</sub> O, Introduction of steam table with respect to steam generation process; definition of saturation, wet & superheated status. Definition of dryness fraction of steam, degree of superheat of steam. H-s chart of steam (Mollier's Chart).
4.	<b>1st Law of Thermodynamics:</b> Definition of stored energy & internal energy, 1st Law of Thermodynamics of cyclic process, Non Flow Energy Equation, Flow Energy & Definition of Enthalpy, Conditions for Steady State Steady Flow; Steady State Steady Flow Energy Equation.
5.	<b>2nd Law of Thermodynamics:</b> Definition of Sink, Source Reservoir of Heat, Heat Engine, Heat Pump & Refrigerator: Thermal Efficiency of Heat Engines & co-efficient of performance of Refrigerators, Kelvin — Planck & Claussius Statements of 2nd Law of Thermodynamics, Absolute or Thermodynamic Scale of temperature, Claussius

महाराष्ट्र नगरपरिषद पाणीपुरवठा , जलनिस्सारण व स्वच्छता अभियांत्रिकी सेवा (नप कर्मचारी) मुख्य परीक्षा अभ्यासक्रम	
Sr. No.	Topic
	Integral, Entropy, Entropy change calculation of ideal gas processes. Carnot Cycle & Carnot Efficiency, PMM-2; definition & its impossibility.
6.	<b>Air standard Cycles for IC engines:</b> Otto cycle; plot on P-V, T-S Planes; Thermal Efficiency, Diesel Cycle; Plot on P-V, T-S planes; Thermal efficiency. IC Engine Performance, IC Engine Combustion, IC Engine Cooling & Lubrication.
7.	<b>Rankine cycle of steam:</b> Simple Rankine cycle plot on P-V, T-S, h-s planes, Rankine cycle efficiency with & without pump work.
8.	<b>Boilers;</b> Classification; Specification; Fittings & Accessories: Fire Tube & Water Tube Boilers. –
9.	<b>Air Compressors &amp; their cycles:</b> Refrigeration Cycles; Principle of a Refrigeration Plant; Nozzles & Steam Turbines Fluid Mechanics & Machinery.
10.	<b>Properties &amp; Classification of Fluid :</b> Ideal & real fluids, Newton's law of viscosity, Newtonian and Non-Newtonian fluids, compressible and incompressible fluids
11.	<b>Fluid Statics:</b> Pressure at a point.
12.	<b>Measurement of Fluid Pressure:</b> Manometers, U-tube, Inclined tube.
13.	<b>Fluid Kinematics:</b> Stream line, laminar & turbulent flow, external & internal flow, continuity equation.
14.	<b>Dynamics of ideal fluids:</b> Bernoulli's equation, Total head; Velocity head; Pressure head; Application of Bernoulli's equation.
15.	<b>Measurement of Flow rate Basic Principles:</b> Venturimeter, Pilot tube, Orifice meter.
16.	<b>Hydraulic Turbines:</b> Classifications, Principles.
17.	<b>Centrifugal Pumps:</b> Classifications, Principles, Performance.
18.	<b>Production Engineering:</b> Classification of Steels : mild steel & alloy steel, Heat treatment of steel, Welding — Arc Welding, Gas Welding, Resistance Welding, Special Welding Techniques i.e. TIG, MIG, etc. (Brazing & Soldering), Welding Defects & Testing; NDT, Foundry & Casting — methods, defects, different casting processes, Forging, Extrusion, etc, Metal cutting principles, cutting tools, Basic Principles of

महाराष्ट्र नगरपरिषद पाणीपुरवठा , जलनिस्सारण व स्वच्छता अभियांत्रिकी सेवा (नप कर्मचारी) मुख्य परीक्षा अभ्यासक्रम	
Sr. No.	Topic
	machining with (I) Lathe (ii) Milling (ii) Drilling (iv) Shaping (v) Grinding, Machines, tools & manufacturing processes.
19	<b>Environmental Engineering</b> Quality of water, Source of water supply, Purification of water, Distribution of water, Need of sanitation, Sewerage systems, Circular sewers, Oval sewer, Sewer appurtenances, Surface water drainage sewage treatments.

९ महाराष्ट्र नगरपरिषद लेखापरीक्षण व लेखा सेवा (सर्वसाधारण) मुख्य परीक्षा

प्रश्नपत्रिकांची संख्या:- एक

विषय	गुण	प्रश्नसंख्या	दर्जा	माध्यम	कालावधी	प्रश्नपत्रिकेचे स्वरूप
मराठी	३०	३०	बारावी	मराठी	दोन तास	वस्तुनिष्ठ बहुपर्यायी
इंग्रजी	२०	२०	बारावी	इंग्रजी		
वाणिज्य	१००	१००	पदवी	इंग्रजी /मराठी		

अभ्यासक्रम

महाराष्ट्र नगरपरिषद लेखापरीक्षण व लेखा सेवा (सर्वसाधारण) मुख्य परीक्षा अभ्यासक्रम		
Sr. No	Topic	विषय
१	Marathi : सर्वसामान्य शब्दसंग्रह, वाक्यरचना, व्याकरण, म्हणी व वाक्यप्रचार यांचा अर्थ आणि उपयोग तसेच उतान्यावरील प्रश्नांची उत्तरे	(अ) मराठी:- सर्वसामान्य शब्दसंग्रह, वाक्यरचना, व्याकरण, म्हणी व वाक्यप्रचार यांचा अर्थ आणि उपयोग तसेच उतान्यावरील प्रश्नांची उत्तरे
२	<b>English :</b> Common Vocabulary, Sentence Structure, Grammar, Use of Idioms and phrases & their meaning and comprehension of passage.	(ब) इंग्रजी: Common Vocabulary, Sentence Structure, Grammar, Use of Idioms and phrases & their meaning and comprehension of passage.
३.१	<b>Accounting</b> Accounting Standards, Introduction to Accounting Standards, Overview of Accounting (Indian AS) Standard AS 1: Disclosure of Accounting Policies, AS 2: Valuation of Inventories, AS 3: Cash Flow Statements, AS 6: Depreciation Accounting, AS 7: Construction Contracts , AS 9: Revenue Recognition, AS 10: Accounting for Fixed Assets, AS 13: Accounting for Investments, AS 14: Accounting for Amalgamation - Financial statements of Company- Preparation of financial statements- Cash flow Statement (Profit and Loss Account, Balance Sheet and Cash Flow Statement)-Profit/Loss prior to incorporation- Accounting for Bonus Issue, Amalgamation and Reconstruction, Average Due Date and Account Current, Self-Balancing Ledgers, Financial Statements of Not-for-Profit Organizations, Accounts from Incomplete Records, Accounting for Special Transactions (a) Hire purchase and instalment sale transactions (b) Investment accounts (c) Insurance claims for loss of stock and loss of profit. Issues in Partnership Accounts	

महाराष्ट्र नगरपरिषद लेखापरीक्षण व लेखा सेवा (सर्वसाधारण) मुख्य परीक्षा अभ्यासक्रम		
Sr. No	Topic	विषय
	Accounting in Computerized Environment	
३.२	<b>Business Laws</b> The Indian Contract Act, 1872, The Negotiable Instruments Act, 1881, The Payment of Bonus Act, 1965, The Employees' Provident Fund and Miscellaneous Provisions Act, 1952, The Payment of Gratuity Act, 1972	
३.३	<b>Company Law</b> The Companies Act, 2013, Preliminary, Prospectus, Share and Share capital, Cost Accounting , Introduction to Cost Accounting, Materials, Labour, Overheads, Non-Integrated Accounts, Methods, Job and Batch, Contract, Operating, Process and Operation, Standard Costing, Marginal Costing, Budgets and Budgetary Control ( <b>Basics</b> )	
३.४	<b>Financial Management</b> Scope and Objectives of Financial Management, Time Value of Money, Financial Analysis and Planning, Financing Decisions, Types of Financing, Investment Decisions, Management of working capital	
३.५	<b>Income-tax</b> The Income-tax Act, 1961, Basic concepts, Residential status and scope of total income, Incomes which do not form part of total income ( Sec 10), 5 Heads of income, Provisions of Clubbing, Set-off and carry forward of losses, Deductions from gross total income, Computation of total income and tax payable. Provisions concerning Advance tax and TDS, Provisions for filing of return of income.	
३.६	<b>Auditing and Assurance</b> Auditing Concepts, Auditing and Assurance Standards, Preparation for an Audit, Internal Control, Vouching, Verification of Assets and Liabilities, Company Audit, Audit Report, Special Audits	
३.७	<b>Information Technology</b> Computer software, Data Storage, Retrievals and Data Base Management Systems, Computer Networks & Network Security, Internet and other technologies, Flowcharts, Decision Tables, ERP ,SAP.	
३.८	<b>Double Entry System &amp; Single Entry System of Accounting</b> Journal,Ledger Account posting, Subsidiary Book and Cash book & Petty cash book Accounting , Preparation of Trial Balance and final account	
३.९	<b>Accounting of Not-for-Profit Organizations</b> Accounts of Non-profit making organisation , Final Account of non-profit making organisation , Accounting standards applicable to non-profit organisation	
३.१०	<b>Bank Reconciliation Statement preparation</b>	
३.११	<b>Depreciation Accounting</b>	
३.१३	<b>Preparation of Accounting Documents</b> such as vouchers, cash memo, Invoice etc.	

१० महाराष्ट्र नगरपरिषद कर निर्धारण व प्रशासकीय सेवा (सर्वसाधारण) मुख्य परीक्षा

प्रश्नपत्रिकांची संख्या:- एक

विषय	गुण	प्रश्न संख्या	दर्जा	माध्यम	कालावधी	प्रश्नपत्रिकेचे स्वरूप
मराठी	३०	३०	बारावी	मराठी	दोन तास	वस्तुनिष्ठ बहुपर्यायी
इंग्रजी	२०	२०	बारावी	इंग्रजी		
सामान्य अध्ययन	१००	१००	पदवी	इंग्रजी /मराठी		

अभ्यासक्रम

अ.क्र.	महाराष्ट्र नगरपरिषद कर निर्धारण व प्रशासकीय सेवा (सर्वसाधारण) मुख्य परीक्षा अभ्यासक्रम	
१	Marathi : सर्वसामान्य शब्दसंग्रह, वाक्यरचना, व्याकरण, म्हणी व वाक्यप्रचार यांचा अर्थ आणि उपयोग तसेच उताऱ्यावरील प्रश्नांची उत्तरे	(अ) मराठी:- सर्वसामान्य शब्दसंग्रह, वाक्यरचना, व्याकरण, म्हणी व वाक्यप्रचार यांचा अर्थ आणि उपयोग तसेच उताऱ्यावरील प्रश्नांची उत्तरे
२	English : Common Vocabulary, Sentence Structure, Grammar, Use of Idioms and phrases & their meaning and comprehension of passage.	(ब) इंग्रजी: Common Vocabulary, Sentence Structure, Grammar, Use of Idioms and phrases & their meaning and comprehension of passage.
३.१	Current affairs Related to World and India	चालू घडामोड- जागतिक तसेच भारतातील
३.२	<b>General Mental Ability</b>	बुद्धिमत्ता चाचणी
३.३	<b>Geography of Maharashtra-</b> Physical geography of Maharashtra, main Physiographic divisions of Maharashtra, Climate, Rainfall and temperature, variation in divisional rainfall, rivers, mountains; Political divisions, Natural resources – Forest and minerals, Human and Social Geography- Population, Migration and impacts of migration on source and destination, Human settlements, Slums and their problems	<b>महाराष्ट्राचा भूगोल-</b> महाराष्ट्राचा रचनात्मक (Physical) भूगोल, मुख्य रचनात्मक (Physiographic) विभाग, हवामान , पर्जन्यमान व तापमान, पर्जन्यातील विभागवार बदल, नद्या, पर्वत व डोंगर, राजकीय विभाग, नैसर्गिक संपत्ती- वने व खनिजे, मानवी व सामाजिक भूगोल- लोकसंख्या (Population), स्थलांतर व त्याचे <b>Source आणि Destination</b> वरील परिणाम, ग्रामीण वस्त्या व तांडे, झोपडपट्ट्या व त्यांचे प्रश्न



अ.क्र.	महाराष्ट्र नगरपरिषद कर निर्धारण व प्रशासकीय सेवा (सर्वसाधारण) मुख्य परीक्षा अभ्यासक्रम	
३.४	<p><b>History of Maharashtra :</b> Social and Economic awareness (1885 - 1947), the role of the prominent leaders, Impact and role of the education and newspapers on the social awareness in pre-independence period of India; parallel movements in pre-independence period, National movements.</p>	<p><b>महाराष्ट्राचा इतिहास-</b> सामाजिक व आर्थिक जागृती (१८८५-१९४७), महत्वाच्या नेत्यांचे काम/भूमिका, स्वातंत्र्यपूर्व भारतातील सामाजिक जागृतीतील वर्तमानपत्रे व शिक्षणाचा परिणाम/भूमिका, स्वातंत्र्यपूर्व काळातील इतर समकालीन चळवळी, राष्ट्रीय चळवळी.</p>
३.५	<p><b>Indian Constitution</b> Formation of Indian Constitution, The objectives and principles of preamble to the Constitution of India, Important articles of the Indian constitution / Salient features, relationship between the center and state, Secular state, fundamental rights and duties, Directive Principles of state policy- Education, Uniform civil code, Independent judicial system, Governor, Chief minister, cabinet – role, rights and functions, state assembly- legislative assembly, legislative council and their members, rights, functions and role, law committees.</p>	<p><b>भारतीय राज्यघटना-</b> घटना कशी तयार झाली आणि घटनेच्या प्रस्तावने मागची भूमिका व तत्वे, घटनेची महत्वाची कलमे/ठळक वैशिष्ट्ये, केंद्र व राज्य संबंध, निधर्मी राज्य, मुलभूत हक्क व कर्तव्ये, राज्याच्या धोरणाची मार्गदर्शक तत्वे- शिक्षण, युनीफॉर्म सिव्हील कोड, स्वतंत्र न्यायपालिका, राज्यपाल, मुख्यमंत्री व मंत्रीमंडळ- Role, अधिकार व कार्य, राज्य विधीमंडळ- विधानसभा, विधानपरिषद व त्यांचे सदस्य, अधिकार, कार्य व Role, विधी समित्या.</p>
३.६	<p><b>Indian political System-</b> Indian political system ( The Structure, Rights and Functions), The central and state legislature, state government and administration (With Special reference to – Maharashtra)</p>	<p><b>राजकीय यंत्रणा</b> (शासनाची रचना अधिकार व कार्य) केंद्र सरकार, केंद्रीय विधिमंडळ आणि राज्य सरकार व प्रशासन (महाराष्ट्राचा विशेष संदर्भ)</p>
३.७	<p><b>District Administration, Rural and Urban Local Government (Maharashtra)</b></p>	<p><b>जिल्हा प्रशासन, ग्रामीण आणि नागरी स्थानिक शासन (विशेष महाराष्ट्र संदर्भ)</b></p>
३.८	<p><b>Judicial System :</b> Judicial system- Composition Integrated Judicial System- functions ; The Role and the rights/power of the Supreme court and the High court, Subordinate Courts, The Lokpal and Lokayukta, Lok Adalat, Judicial system for the protection of the constitutional orders, Judicial Activism, Public interest litigation.</p>	<p><b>न्यायमंडळ-</b> न्यायमंडळाची रचना, एकात्मिक न्यायमंडळ- कार्य, सर्वोच्च न्यायालय व उच्च न्यायालयाची भूमिका व अधिकार, दुय्यम न्यायालये- लोकपाल, लोकायुक्त आणि लोक न्यायालय, सांविधानिक आदेशाचे रक्षण करणारे न्यायमंडळ, न्यायालयीन सक्रियता, जनहित याचिका.</p>

अ.क्र.	महाराष्ट्र नगरपरिषद कर निर्धारण व प्रशासकीय सेवा (सर्वसाधारण) मुख्य परीक्षा अभ्यासक्रम	
३.९	<b>Right to Information Act 2005</b>	माहिती अधिकार अधिनियम-२००५
३.१०	<b>Computer and Information Technology –</b> The role of computer in modern Society, Data communication, networking and web technology in the different fields, cybercrimes and its prevention, Information technology as a new industry, use of information technology to get information about various services and facilities, The growth of the IT Industry and status in India, Government Programs i.e. Media Asia lab, Vidya vahini, Dnyan Vahini, Collective Information center etc. Issues in the information technology and its future.	संगणक व माहिती तंत्रज्ञान- आधुनिक समाजातील संगणकाची भूमिका, जीवनातील वेगवेगळ्या क्षेत्रात संगणकाचा वापर, डाटा कम्युनिकेशन, नेटवर्किंग आणि वेब टेक्नॉलॉजी, सायबर गुन्हे व त्यावरील प्रतिबंध, नविन उद्योग म्हणून माहिती तंत्रज्ञानचा निरनिराळ्या सेवा सुविधांची माहिती मिळण्यासाठी होणारा उपयोग, भारतातील माहिती तंत्रज्ञान उद्योगाची वाढ व त्याचा दर्जा, शासनाचे कार्यक्रम, जसे मिडीया लॅब एशिया, विद्या वाहिनी, ज्ञान वाहिनी, सामुहिक माहिती केंद्र इत्यादी, माहिती तंत्रज्ञान उद्योगातील मुलभूत प्रश्न व त्याचे भवितव्य.
३.११	<b>Economic Reforms and Related Acts</b> Background, concept of Liberalization, privatization and Globalization, meaning and Scope, limits; Economic reforms done by State and central government, WTO - Provisions and Reforms, It's expected impact on Indian Economy, difficulties and problems, Act/ Rules related to GST, Sales Tax, VAT and WTO.	<b>आर्थिक सुधारणा व कायदे-</b> पार्श्वभूमी, उदारीकरण, खाजगीकरण, जागतिकरण संकल्पना व त्याचा अर्थ आणि व्याप्ती, मर्यादा, केंद्र व राज्य स्तरावरील आर्थिक सुधारणा, WTO तरतुदी आणि सुधारणा , त्याचे भारतीय अर्थव्यवस्थेवरील अपेक्षित परिणाम, प्रश्न व समस्या, GST विक्रीकर, VAT, WTO, इत्यादीशी संबंधित कायदे / नियम.
३.१२	<b>Public Finance</b> The source of Revenue, Tax, non-tax; public debt in the central and State; Increase in the Central and the State Public Expenditure, Public expenditure reform based budget, zero budget, the review of the tax reforms in India, tax reforms done at the State, VAT, increase in the public debt , Problem related to growing debts of states, Revenue deficit-Concept and Controlling measures , Undertaking of the Central and the State and the Reserve Bank, Revenue reforms in India,	<b>सार्वजनिक वित्त व्यवस्था</b> महसुलाचे साधन, टॅक्स, नॉनटॅक्स, भारतातील केंद्र व राज्यातील सार्वजनिक ऋण, केंद्र व राज्याची सार्वजनिक खर्च वाढ, सार्वजनिक खर्च सुधारणा आधारित अर्थसंकल्प, शुन्याधारित अर्थसंकल्प, भारतातील करसुधारणा आढावा, राज्य पातळीवरील करसुधारणा VAT सार्वजनिक

अ.क्र.	महाराष्ट्र नगरपरिषद कर निर्धारण व प्रशासकीय सेवा (सर्वसाधारण) मुख्य परीक्षा अभ्यासक्रम	
	The Review on the Central and the State level.	ऋण वाढ, रचना आणि भार, राज्याची कर्जबाजारीपणाची समस्या, राजकोषीय तुट, संकल्पना, तुटीचे नियंत्रण, केंद्र, राज्य शासनाचे उपक्रम व रिझर्व्ह बँक, भारतातील राजकोषीय सुधारणा, केंद्र व राज्यस्तरावरील आढावा.

११ महाराष्ट्र नगरपरिषद लेखापरीक्षण व लेखा सेवा (नप कर्मचारी) मुख्य परीक्षा

प्रश्नपत्रिकांची संख्या:- एक

प्रश्नपत्रिकेचा तपशील खालीलप्रमाणे:-

विषय	गुण	प्रश्नसंख्या	दर्जा	माध्यम	कालावधी	प्रश्नपत्रिकेचे स्वरूप
मराठी	३०	३०	बारावी	मराठी	दोन तास	वस्तुनिष्ठ बहुपर्यायी
इंग्रजी	२०	२०	बारावी	इंग्रजी		
वाणिज्य	१००	१००	पदवी	इंग्रजी /मराठी		

अभ्यासक्रम

महाराष्ट्र नगरपरिषद लेखापरीक्षण व लेखा सेवा (नप कर्मचारी) मुख्य परीक्षा अभ्यासक्रम		
Sr. No	Topic	विषय
१	Marathi : सर्वसामान्य शब्दसंग्रह, वाक्यरचना, व्याकरण, म्हणी व वाक्यप्रचार यांचा अर्थ आणि उपयोग तसेच उतान्यावरील प्रश्नांची उत्तरे	(अ) मराठी:- सर्वसामान्य शब्दसंग्रह, वाक्यरचना, व्याकरण, म्हणी व वाक्यप्रचार यांचा अर्थ आणि उपयोग तसेच उतान्यावरील प्रश्नांची उत्तरे
२	<b>English :</b> Common Vocabulary, Sentence Structure, Grammar, Use of Idioms and phrases & their meaning and comprehension of passage.	(ब) इंग्रजी: Common Vocabulary, Sentence Structure, Grammar, Use of Idioms and phrases & their meaning and comprehension of passage.
३.१	<b>Accounting</b> Accounting Standards, Introduction to Accounting Standards, Overview of Accounting (Indian AS) Standard AS 1: Disclosure of Accounting Policies, AS 2: Valuation of Inventories, AS 3: Cash Flow Statements, AS 6: Depreciation Accounting, AS 7: Construction Contracts , AS 9: Revenue Recognition, AS 10: Accounting for Fixed Assets, AS 13: Accounting for Investments, AS 14: Accounting for Amalgamation - Financial statements of Company- Preparation of financial statements- Cash flow Statement (Profit and Loss Account, Balance Sheet and Cash Flow Statement)-Profit/Loss prior to incorporation- Accounting for Bonus Issue, Amalgamation and Reconstruction, Average Due Date and Account Current, Self-Balancing Ledgers, Financial Statements of Not-for-Profit Organizations, Accounts from Incomplete Records, Accounting for Special Transactions (a) Hire purchase and instalment sale transactions (b) Investment accounts (c) Insurance claims for loss of stock and loss of profit. Issues in Partnership Accounts Accounting in Computerized Environment	
३.२	<b>Business Laws</b>	

<b>महाराष्ट्र नगरपरिषद लेखापरीक्षण व लेखा सेवा (नप कर्मचारी) मुख्य परीक्षा अभ्यासक्रम</b>	
	The Indian Contract Act, 1872, The Negotiable Instruments Act, 1881, The Payment of Bonus Act, 1965, The Employees' Provident Fund and Miscellaneous Provisions Act, 1952, The Payment of Gratuity Act, 1972
३.३	<b>Company Law</b> The Companies Act, 2013, Preliminary, Prospectus, Share and Share capital, Cost Accounting, Introduction to Cost Accounting, Materials, Labour, Overheads, Non-Integrated Accounts, Methods, Job and Batch, Contract, Operating, Process and Operation, Standard Costing, Marginal Costing, Budgets and Budgetary Control ( <b>Basics</b> )
३.४	<b>Financial Management</b> Scope and Objectives of Financial Management, Time Value of Money, Financial Analysis and Planning, Financing Decisions, Types of Financing, Investment Decisions, Management of working capital
३.५	<b>Income-tax</b> The Income-tax Act, 1961, Basic concepts, Residential status and scope of total income, Incomes which do not form part of total income ( Sec 10), 5 Heads of income, Provisions of Clubbing, Set-off and carry forward of losses, Deductions from gross total income, Computation of total income and tax payable. Provisions concerning Advance tax and TDS, Provisions for filing of return of income.
३.६	<b>Auditing and Assurance</b> Auditing Concepts, Auditing and Assurance Standards, Preparation for an Audit, Internal Control, Vouching, Verification of Assets and Liabilities, Company Audit, Audit Report, Special Audits
३.७	<b>Information Technology</b> Computer software, Data Storage, Retrievals and Data Base Management Systems, Computer Networks & Network Security, Internet and other technologies, Flowcharts, Decision Tables, ERP, SAP.
३.८	<b>Double Entry System &amp; Single Entry System of Accounting</b> Journal, Ledger Account posting, Subsidiary Book and Cash book & Petty cash book Accounting, Preparation of Trial Balance and final account
३.९	<b>Accounting of Not-for-Profit Organizations</b> Accounts of Non-profit making organisation, Final Account of non-profit making organisation, Accounting standards applicable to non-profit organisation
३.१०	<b>Bank Reconciliation Statement preparation</b>
३.११	<b>Depreciation Accounting</b>
३.१३	<b>Preparation of Accounting Documents</b> such as vouchers, cash memo, Invoice etc.

१२ . महाराष्ट्र नगरपरिषद कर निर्धारण व प्रशासकीय सेवा (नप कर्मचारी) मुख्य परीक्षा

प्रश्नपत्रिकांची संख्या:- एक

विषय	गुण	प्रश्न संख्या	दर्जा	माध्यम	कालावधी	प्रश्नपत्रिकेचे स्वरूप
मराठी	३०	३०	बारावी	मराठी	दोन तास	वस्तुनिष्ठ बहुपर्यायी
इंग्रजी	२०	२०	बारावी	इंग्रजी		
सामान्य अध्ययन	१००	१००	पदवी	इंग्रजी /मराठी		

अभ्यासक्रम

महाराष्ट्र नगरपरिषद कर निर्धारण व प्रशासकीय सेवा (नप कर्मचारी) मुख्य परीक्षा अभ्यासक्रम		
अ.क्र.	English	मराठी:-
१	Marathi : सर्वसामान्य शब्दसंग्रह, वाक्यरचना, व्याकरण, म्हणी व वाक्यप्रचार यांचा अर्थ आणि उपयोग तसेच उतान्यावरील प्रश्नांची उत्तरे	(अ) मराठी:- सर्वसामान्य शब्दसंग्रह, वाक्यरचना, व्याकरण, म्हणी व वाक्यप्रचार यांचा अर्थ आणि उपयोग तसेच उतान्यावरील प्रश्नांची उत्तरे
२	English : Common Vocabulary, Sentence Structure, Grammar, Use of Idioms and phrases & their meaning and comprehension of passage.	(ब) इंग्रजी: Common Vocabulary, Sentence Structure, Grammar, Use of Idioms and phrases & their meaning and comprehension of passage.
३.१	Current affairs Related to World and India	चालू घडामोड- जागतिक तसेच भारतातील
३.२	<b>General Mental Ability</b>	बुद्धिमत्ता चाचणी
३.३	<b>Geography of Maharashtra-</b> Physical geography of Maharashtra, main Physiographic divisions of Maharashtra, Climate, Rainfall and temperature, variation in divisional rainfall, rivers, mountains; Political divisions, Natural resources – Forest and minerals, Human and Social Geography- Population, Migration and impacts of migration on source and destination, Human settlements, Slums and their problems	<b>महाराष्ट्राचा भूगोल-</b> महाराष्ट्राचा रचनात्मक (Physical) भूगोल, मुख्य रचनात्मक (Physiographic) विभाग, हवामान , पर्जन्यमान व तापमान, पर्जन्यातील विभागवार बदल, नद्या, पर्वत व डोंगर, राजकीय विभाग, नैसर्गिक संपत्ती- वने व खनिजे, मानवी व सामाजिक भूगोल- लोकसंख्या (Population), स्थलांतर व त्याचे <b>Source आणि Destination</b> वरील परिणाम, ग्रामीण वस्त्या व तांडे, झोपडपट्ट्या व त्यांचे प्रश्न
३.४	<b>History of Maharashtra :</b>	<b>महाराष्ट्राचा इतिहास-</b>

महाराष्ट्र नगरपरिषद कर निर्धारण व प्रशासकीय सेवा (नप कर्मचारी) मुख्य परीक्षा अभ्यासक्रम		
अ.क्र.	English	मराठी:-
	Social and Economic awareness (1885 - 1947), the role of the prominent leaders, Impact and role of the education and newspapers on the social awareness in pre-independence period of India; parallel movements in pre-independence period, National movements.	सामाजिक व आर्थिक जागृती (१८८५-१९४७), महत्वाच्या नेत्यांचे काम/भूमिका, स्वातंत्र्यपूर्व भारतातील सामाजिक जागृतीतील वर्तमानपत्रे व शिक्षणाचा परिणाम/भूमिका, स्वातंत्र्यपूर्व काळातील इतर समकालीन चळवळी, राष्ट्रीय चळवळी.
३.५	<b>Indian Constitution</b> Formation of Indian Constitution, The objectives and principles of preamble to the Constitution of India, Important articles of the Indian constitution / Salient features, relationship between the center and state, Secular state, fundamental rights and duties, Directive Principles of state policy- Education, Uniform civil code, Independent judicial system, Governor, Chief minister, cabinet – role, rights and functions, state assembly-legislative assembly, legislative council and their members, rights, functions and role, law committees.	<b>भारतीय राज्यघटना-</b> घटना कशी तयार झाली आणि घटनेच्या प्रस्तावने मागची भूमिका व तत्त्वे, घटनेची महत्वाची कलमे/ठळक वैशिष्ट्ये, केंद्र व राज्य संबंध, निधर्मी राज्य, मुलभूत हक्क व कर्तव्ये, राज्याच्या धोरणाची मार्गदर्शक तत्त्वे- शिक्षण, युनीफॉर्म सिव्हील कोड, स्वतंत्र न्यायपालिका, राज्यपाल, मुख्यमंत्री व मंत्रीमंडळ- Role, अधिकार व कार्य, राज्य विधीमंडळ- विधानसभा, विधानपरिषद व त्यांचे सदस्य, अधिकार, कार्य व Role, विधी समित्या.
३.६	<b>Indian political System-</b> Indian political system ( The Structure, Rights and Functions), The central and state legislature, state government and administration (With Special reference to – Maharashtra)	<b>राजकीय यंत्रणा</b> (शासनाची रचना अधिकार व कार्य) केंद्र सरकार, केंद्रीय विधिमंडळ आणि राज्य सरकार व प्रशासन (महाराष्ट्राचा विशेष संदर्भ)
३.७	<b>District Administration, Rural and Urban Local Government (Maharashtra)</b>	जिल्हा प्रशासन, ग्रामीण आणि नागरी स्थानिक शासन (विशेष महाराष्ट्र संदर्भ)
३.८	<b>Judicial System</b> :Judicial system-Composition Integrated Judicial System-functions ; The Role and the rights/power of the Supreme court and the High court, Subordinate Courts, The Lokpal and Lokayukta, Lok Adalat, Judicial system for the protection of the constitutional	<b>न्यायमंडळ-</b> न्यायमंडळाची रचना, एकात्मिक न्यायमंडळ- कार्य, सर्वोच्च न्यायालय व उच्च न्यायालयाची भूमिका व अधिकार, दुय्यम न्यायालये- लोकपाल, लोकायुक्त आणि लोक न्यायालय, सांविधानिक आदेशाचे रक्षण

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अ.क्र.	English	मराठी:-
	orders, Judicial Activism, Public interest litigation.	करणारे न्यायमंडळ, न्यायालयीन सक्रियता, जनहित याचिका.
३.९	<b>Right to Information Act 2005</b>	माहिती अधिकार अधिनियम-२००५
३.१०	<b>Computer and Information Technology –</b> The role of computer in modern Society, Data communication, networking and web technology in the different fields, cybercrimes and its prevention, Information technology as a new industry, use of information technology to get information about various services and facilities, The growth of the IT Industry and status in India, Government Programs i.e. Media Asia lab, Vidya vahini, Dnyan Vahini, Collective Information center etc. Issues in the information technology and its future.	संगणक व माहिती तंत्रज्ञान- आधुनिक समाजातील संगणकाची भूमिका, जीवनातील वेगवेगळ्या क्षेत्रात संगणकाचा वापर, डाटा कम्युनिकेशन, नेटवर्कींग आणि वेब टेक्नॉलॉजी, सायबर गुन्हे व त्यावरील प्रतिबंध, नविन उद्योग म्हणून माहिती तंत्रज्ञानचा निरनिराळ्या सेवा सुविधांची माहिती मिळण्यासाठी होणारा उपयोग, भारतातील माहिती तंत्रज्ञान उद्योगाची वाढ व त्याचा दर्जा, शासनाचे कार्यक्रम, जसे मिडीया लॅब एशिया, विद्या वाहिनी, ज्ञान वाहिनी, सामुहिक माहिती केंद्र इत्यादी, माहिती तंत्रज्ञान उद्योगातील मुलभूत प्रश्न व त्याचे भवितव्य.
३.११	<b>Economic Reforms and Related Acts</b> Background, concept of Liberalization, privatization and Globalization, meaning and Scope, limits; Economic reforms done by State and central government, WTO - Provisions and Reforms, It's expected impact on Indian Economy, difficulties and problems, Act/ Rules related to GST, Sales Tax, VAT and WTO.	<b>आर्थिक सुधारणा व कायदे-</b> पार्श्वभूमी, उदारीकरण, खाजगीकरण, जागतिकरण संकल्पना व त्याचा अर्थ आणि व्याप्ती, मर्यादा, केंद्र व राज्य स्तरावरील आर्थिक सुधारणा, WTO तरतुदी आणि सुधारणा, त्याचे भारतीय अर्थव्यवस्थेवरील अपेक्षित परिणाम, प्रश्न व समस्या, GST विक्रीकर, VAT, WTO, इत्यादीशी संबंधित कायदे / नियम.
३.१२	<b>Public Finance</b> The source of Revenue, Tax, non-tax; public debt in the central and State; Increase in the Central and the State Public Expenditure, Public expenditure reform based budget, zero budget, the	<b>सार्वजनिक वित्त व्यवस्था</b> महसुलाचे साधन, टॅक्स, नॉनटॅक्स, भारतातील केंद्र व राज्यातील सार्वजनिक ऋण, केंद्र व राज्याची सार्वजनिक खर्च वाढ, सार्वजनिक खर्च सुधारणा आधारित



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अ.क्र.	English	मराठी:-
	review of the tax reforms in India, tax reforms done at the State, VAT, increase in the public debt , Problem related to growing debts of states, Revenue deficit-Concept and Controlling measures , Undertaking of the Central and the State and the Reserve Bank, Revenue reforms in India, The Review on the Central and the State level.	अर्थसंकल्प, शुन्याधारित अर्थसंकल्प, भारतातील करसुधारणा आढावा, राज्य पातळीवरील करसुधारणा VAT सार्वजनिक ऋण वाढ, रचना आणि भार, राज्याची कर्जबाजारीपणाची समस्या, राजकोषीय तुट, संकल्पना, तुटीचे नियंत्रण, केंद्र, राज्य शासनाचे उपक्रम व रिझर्व्ह बँक, भारतातील राजकोषीय सुधारणा, केंद्र व राज्यस्तरावरील आढावा.