

ਅਧੀਨ ਸੇਵਾਵਾਂ ਚੋਣ ਬੋਰਡ, ਪੰਜਾਬ
ਵਣ ਭਵਨ, ਸੈਕਟਰ 68, ਐਸ.ਏ.ਐਸ. ਨਗਰ

ਜਨਤਕ ਸੂਚਨਾ

ਅਧੀਨ ਸੇਵਾਵਾਂ ਚੋਣ ਬੋਰਡ, ਪੰਜਾਬ ਵੱਲੋਂ ਸਾਇੰਸ, ਤਕਨੀਕੀ ਅਤੇ ਵਾਤਾਵਰਣ ਵਿਭਾਗ ਦੀਆਂ Scientific Assistant ਦੀਆਂ 10 ਅਸਾਮੀਆਂ ਇਸਤਿਹਾਰ ਨੰ. 14 ਆਫ 2022 ਰਾਹੀਂ ਪ੍ਰਕਾਸ਼ਿਤ ਕੀਤੀਆਂ ਗਈਆਂ ਸਨ ਜਿਸਦਾ ਸਿਲੇਬਸ ਮਿਤੀ: 03.03.2023 ਨੂੰ ਬੋਰਡ ਦੀ ਵੈਬਸਾਇਟ ਤੇ ਪਬਲਿਸ਼ ਕੀਤਾ ਗਿਆ ਸੀ।

2.0 ਸਾਇੰਸ, ਤਕਨੀਕੀ ਅਤੇ ਵਾਤਾਵਰਣ ਵਿਭਾਗ ਦੀ ਮੰਗ ਅਨੁਸਾਰ ਇਸ ਸਿਲੇਬਸ ਦੇ ਟੈਕਨੀਕਲ ਭਾਗ ਵਿਚ ਕੁਝ ਸੋਧ ਕਰਦੇ ਹੋਏ ਇਸ ਨੂੰ ਰਿਵਾਇਜ਼ ਕੀਤਾ ਗਿਆ ਹੈ। ਇਹ ਰਿਵੀਜ਼ਨ ਮਿਤੀ: 03.03.2023 ਨੂੰ ਜਾਰੀ ਕੀਤੇ ਹੋਏ ਸਿਲੇਬਸ ਦੇ Part B Section (I) ਵਿਚ ਕੀਤੀ ਗਈ ਹੈ।

3.0 ਨਵਾਂ ਰਿਵਾਇਜ਼ਡ ਸਿਲੇਬਸ ਨਾਲ ਨੱਥੀ ਹੈ।

-ਸਹੀ-
ਸਹਾਇਕ ਡਾਇਰੈਕਟਰ
ਅਧੀਨ ਸੇਵਾਵਾਂ ਚੋਣ ਬੋਰਡ

Final Plan of Written Examination

Date: 07.06.2023

All the aspirants are informed as under with respect to the written test to be conducted for the recruitment of **Scientific Assistant (Advt. No. 14 of 2022)** :-

1. The Exam will be conducted in MCQ (Multiple Choice Questions) format. OMR sheets will be used for answering the questions.
2. The Exam would be of 2 hours 30 minutes duration.
3. The Exam will consist of two parts (Part A and Part B) as follows:-

(a) **Part A:-** Qualifying test of Punjabi Language equivalent to Matriculation standard as per Notification No. G.S.R.72 / Const. / Art.309/Amd.(22)/2022, dated:28.10.2022.

Part	Topic	No. of Questions	Marks (Each Question carries 1 mark)	Type of Questions
A	Punjabi (Qualifying Nature) (Annexure-1)	50	50	MCQs (Multiple Choice Questions)

Note:- (i) There will be no negative marking in Part-A.

(ii) Part 'B' will be evaluated only if a candidate scores minimum 50% marks (i.e 25 marks) in Part 'A'.

(b) **Part-B:-** Part-B will consist of two sub-sections i.e Section (I) and Section (II) as following:-

Part	Section	Topic	No. of Questions	Marks (Each Question carries 1 mark)	Type of Questions
B	(I)	Questions from the Subject (Annexure-2)	70	70	MCQs (Multiple Choice Questions)
	(II)	Questions from General Knowledge, English, Logical Reasoning and Mental ability, Punjabi (Annexure-3)	30	30	
	Total		100	100	

Note:-(i) There will be negative marking in Part-B. Each question carries 1 mark. For every wrong answer, 1/4th mark would be deducted. The question(s) not attempted will receive no credit or discredit.

(ii) The merit list of candidates, who will qualify Part-'A', will be prepared on the basis of marks secured by candidate in Part-B.

4. Tentative syllabus for the written examination for the recruitment of **Scientific Assistant** is annexed at Annexure-1, 2 and 3.

Annexure-1 (Punjabi Syllabus)

Part-A (Punjabi Qualifying Exam)

1. ਜੀਵਨੀ ਅਤੇ ਰਚਨਾਵਾਂ ਨਾਲ ਸਬੰਧਤ ਪ੍ਰਸ਼ਨ:-
ਸ਼੍ਰੀ ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਜੀ, ਸ਼੍ਰੀ ਗੁਰੂ ਅੰਗਦ ਦੇਵ ਜੀ, ਸ਼੍ਰੀ ਗੁਰੂ ਰਾਮਦਾਸ ਜੀ,
ਸ਼੍ਰੀ ਗੁਰੂ ਅਰਜਨ ਦੇਵ ਜੀ, ਸ਼੍ਰੀ ਗੁਰੂ ਤੇਗ ਬਹਾਦਰ ਜੀ, ਸ਼੍ਰੀ ਗੁਰੂ ਗੋਬਿੰਦ ਸਿੰਘ ਜੀ।
2. ਵਿਰੋਧਾਰਥਕ ਸ਼ਬਦ, ਸਮਾਨਾਰਥਕ ਸ਼ਬਦ।
3. ਮੁਹਾਵਰੇ।
4. ਅਖਾਣ।
5. ਸਬਦ ਦੇ ਭੇਦ।
6. ਅਗੇਤਰ/ਪਿਛੇਤਰ।
7. ਵਚਨ ਬਦਲੇ ਤੇ ਲਿੰਗ ਬਦਲੇ।
8. ਵਿਸ਼ਰਾਮ ਚਿੰਨ੍ਹ।
9. ਸ਼ਬਦਾਂ / ਵਾਕਾਂ ਨੂੰ ਸੁੱਧ ਕਰਕੇ ਲਿਖੋ।
10. ਅੰਗਰੇਜ਼ੀ ਸ਼ਬਦਾਂ ਦਾ ਪੰਜਾਬੀ ਵਿੱਚ ਸੁੱਧ ਰੂਪ।
11. ਅੰਕਾਂ, ਮਹੀਨੇ, ਦਿਨਾਂ ਦਾ ਸੁੱਧ ਪੰਜਾਬੀ ਰੂਪ।
12. ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਨਾਲ ਸਬੰਧਤ ਪ੍ਰਸ਼ਨ।
13. ਪੰਜਾਬ ਦੇ ਇਤਿਹਾਸ ਨਾਲ ਸਬੰਧਤ ਪ੍ਰਸ਼ਨ।
14. ਪੰਜਾਬ ਦੇ ਸਭਿਆਚਾਰ ਨਾਲ ਸਬੰਧਤ ਪ੍ਰਸ਼ਨ।

Annexure-2

Part B (I)- Subject Syllabus

Subject Syllabus for Scientific Assistant (Group-C) in the Department of Science, Technology and Environment, Government of Punjab (Punjab Pollution Control Board, Nabha Road, Patiala

Basic Science: Redox and Complexometric, acid base titrations, Calibrations of volumetric kits, Preparation/standardization of solutions. Basic knowledge of Electro Chemistry; Electro Chemical reactions, non equilibrium electro chemistry; Ions in Solution; Handling of chemical and analysis involving safety and hygiene in the Lab; Determination of errors in Chemical analysis. Knowledge of titrimetric method of analysis involving types of titration, concentration system (Molarity, molality normality, mole fraction) Basic knowledge of gravimetric & thermal methods of analysis; Knowledge of Bio-monitoring. Green chemistry, nanomaterials, photochemistry, thermodynamics, chemical kinetics, synthetic and natural polymers.

Biological Science:- Principles of living organisms; Elements of living organisms; Biomolecules Carbohydrates, Lipids, Proteins, Nucleic acid and vitamins, Classification of biomolecules; Structure and functions of various biomolecules. General Micro-Biology involving observations of microbes, Microbial growth, control of microorganisms. Microbial ecology and Water Microbiology etc.; toxicity testing, toxicity of pesticide/metals. Determination of potability of water following MPN Method (E Coliform & F Coliform)

Environment Science:- Basic concept of environment- lithosphere, hydrosphere, atmosphere and biosphere. Cause, Effects and Control measures of Air Pollution, Water Pollution, Soil Pollution, Marine Pollution, Noise Pollution, Thermal Pollution and Microbial Pollution. Disaster Management floods, earthquake, cyclone and landslides. Ecological interactions: commensalism, amensalism, symbiosis, parasitism and predation.

Climate Change:- Carbon trading, Montreal Protocol, Kyoto Protocol, Carbon credits, Role and functions of IPCC, National and International action plan on climate change. Environment convention and protocols, Conference on Parties (COP) on Environment, Sustainable development. Precautionary Principle, Polluter pays principle.

Environment Laws:- IFA 1927, WLPA 1972, FCA 1980, Biological Diversity Act 2002, Forest Rights Act, 2006. Strategies for conservation-Project Tiger, Elephant, Rhino, Snow leopard. Ramsar Sites, Water Act 1974, Environment (Protection) Act, 1986, Coastal Zone regulations, Legal Framework on Air Pollution Air Act, 1981, National Green Tribunal and Environmental Impact Assessment, Management and Legislation.

Mathematical Science: Measures of central tendency: Mean, Median and Mode, Statistical methods; mean deviation; standard deviations, type of errors, uncertainty, precision and knowledge of statistically evaluation of data.

Instrumentation and Chemical Analysis: Measurement of water quality parameters: sampling and analysis for pH, EC, turbidity, TDS, hardness, chlorides, salinity, DO, BOD, COD, nitrates, phosphates, sulphates, heavy metals and organic contaminants. Measurements technique, Spectroscopy (UV-Visible, infrared, NMR and mass), Ion chromatography & Ion selective electrode measurement technique, Emission and Atomic Absorption spectroscopy, Solid Phase extraction techniques, Chromatographic analysis (Gas Chromatography and HPLC), Industrial Process Analyzers, Air Pollution control and emission measurement techniques.

Annexure-3

Part B(II)--General Knowledge, Logical Reasoning and Mental Ability, English and Punjabi.

Sr. No.	Indicative Contents of Syllabus	Weightage (Approx.)
1	<p>General Knowledge and Current affairs of National and International importance including:</p> <p>(i) Political issues, (ii) Environment issues, (iii) Current Affairs, (iv) Science and Technology, (v) Economic issues, (vi) History of Punjab-14th century onwards (vii) History of India with special reference to Indian freedom struggle movement. (viii) Sports, (ix) Cinema and Literature.</p>	10
2	<p>Logical Reasoning & Mental Ability:</p> <p>Verbal reasoning: Coding, Decoding, Analogy, Classification, Series, Direction sense test, relations, mathematical operations, time test, odd man out problems.</p> <p>Non Verbal reasoning: Series, Analogy and Classification.</p> <p>Basic numerical skills, Percentage, Number system, LCM and HCF, Ratio and Proportion, Number series, Average, Problems based on Ages, Profit & Loss, Partnership and Mixture, Simple and Compound Interest, Work and Time, Time and Distance. Mensuration and Data Interpretation.</p>	10
3	<p>English:-</p> <p>Basic Grammar, Subject and Verb, Adjectives and Adverbs, Synonyms, Antonyms, One Word Substitution, Fill in the Blanks, Correction in Sentences, Idioms and their meanings, Spell Checks, Adjectives, Articles, Prepositions, Direct and Indirect Speech, Active and Passive Voice, Correction in Sentences, etc.</p>	5
4.	<p>ਪੰਜਾਬੀ:-</p> <p>ਸੁੱਧ-ਅਸੁੱਧ, ਸ਼ਬਦਜੋੜ, ਅਗੇਤਰ ਅਤੇ ਪਿਛੇਤਰ, ਸਮਾਨਾਰਥਕ/ਵਿਰੋਧੀਸ਼ਬਦ, ਨਾਂਵ, ਪੜਨਾਂਵ ਅਤੇ ਕਿਰਿਆ ਦੀਆਂ ਕਿਸਮਾਂ ਤੇ ਸਹੀ ਵਰਤੋਂ, ਲਿੰਗ ਅਤੇ ਵਚਨ, ਪੰਜਾਬੀ ਅਖਾਣ ਤੇ ਮੁਹਾਵਰੇ, ਅੰਗਰੇਜ਼ੀ ਤੋਂ ਪੰਜਾਬੀ ਅਨੁਵਾਦ ਅਤੇ ਬਹੁਤੇ ਸ਼ਬਦਾਂ ਦੀ ਥਾਂ ਇੱਕ ਸ਼ਬਦ ਆਦਿ।</p>	5
	Maximum Marks	30

Note:-a) The distribution of marks/question in each section is indicative. It may vary slightly.

b) The syllabus is broadly classified as above but may vary to some extent.