



# HIMACHAL PRADESH PUBLIC SERVICE COMMISSION

Examination-2023

Advertisement Number : **3/4-2023** ,Closing Date for Application : **01/05/2023 11:59PM** and Closing Date for Fee : **01/05/2023 11:59PM**

**Dated : 04/04/2023**

Online Recruitment Applications (ORA\*) are invited from desirous and eligible candidates for recruitment to 14 { Unreserved =5, Scheduled Caste of HP =2, Scheduled Tribe of HP =1, O B C of HP =1, Economically Weaker Section of H.P. =2, Unreserved (Ex-Servicemen of HP (after completion full tenure or on medical ground)) =3}, posts of Junior Scientific Officer, Class-II (on contract basis) in the pay band level -12 (Rs.43000-136000). However, emoluments for contract employee(s) i.e. 60% of the Cell of the applicable level of pay matrix of the corresponding cadre, as per the H.P. Civil Services (Revised Pay) Rules, 2022 as prescribed in the R & P Rules of the posts in H.P. State Pollution Control Board under the Department of Environment, Science & Technology, H.P. through ORA, which shall be available on the Commission's website [www.hppsc.hp.gov.in/hppsc](http://www.hppsc.hp.gov.in/hppsc).

## **IMPORTANT INSTRUCTIONS:-**

1. The candidates must read instructions carefully, which are available on website of the Commission before applying for the post(s) concerned.
2. Date for determining eligibility of all candidates in respect of essential qualification(s) and experience, if any, etc., shall be the prescribed closing date for submission of Online Recruitment Applications (ORA).
3. The candidates should possess requisite essential qualification(s) prescribed for the post(s) for which he/she wants to apply as on closing date for submission of Online Recruitment Applications (ORA) on the website [www.hppsc.hp.gov.in/hppsc](http://www.hppsc.hp.gov.in/hppsc)
4. The candidates must establish their eligibility in respect of category, experience, age and essential qualification(s) etc. as mentioned in the advertisement by uploading copies of certificates of essential qualification, Matriculation certificate as age proof, category certificate and experience certificate (where required) to avoid rejection of their candidature after the closing date.
5. The benefit of reservation for various post(s) will be admissible only to the candidates, who are bonafide residents of Himachal Pradesh in respect of categories, viz., S.C., S.T., O.B.C., E.W.S., Ex-Servicemen, W.F.F. and Persons with disabilities (Loco motor Disabled / Visually Impaired/Hearing Impaired/Autism, Intellectual Disability or Multiple Disability) etc.
6. Category once claimed shall be treated final and no representation /correspondence will be entertained in this regard.
7. The reserved category candidates belonging to other States will be treated as GENERAL CATEGORY CANDIDATES and the benefit of reservation and fee concession will not be admissible to such candidates.
8. Number of post(s) is/are tentative and may increase or decrease from time to time.
9. No in service (regular service)candidate will be interviewed unless he /she brings N.O.C. from the concerned employer.
10. Examination fees once paid will not be refunded.
11. The candidates are required to upload the requisite documents on the OTRS portal.
12. In cases where the number of eligible candidates for recruitment to the post(s) advertised by the Commission is inordinately large, the Commission may limit /shortlist the number of eligible candidates to be called for personality test(s) by subjecting them to either Computer Based Screening Test (objective-type) or Offline Screening Test

(objective) of Two hours duration. Marks obtained in the Screening Test are only meant to short list the number of candidates for personality test(s) and are in no way to be presumed by the candidates as being their merit for final selection.

13. Disputes, if any, shall be subject to Court jurisdiction at Shimla (Himachal Pradesh).

**List of documents to be uploaded on the OTRS portal by the candidate:-**

- 1) Matriculation certificate for age proof.
- 2) Degree certificate along with Marks Sheets of all years/ consolidated mark-sheets in support of Educational Qualification.
- 3) Experience certificate(s) wherever required.
- 4) Valid category certificate(s) in support of their eligibility, if any, viz., S.C., S.T., O.B.C., E.W.S., Ex-Servicemen, Ward of Ex. Servicemen, WFF and Persons with disabilities etc. All these certificates along with undertaking wherever required, should be on Performa prescribed by the Government of H.P. from time to time. Scheduled Castes, Scheduled Tribes and Other Backward Classes Certificates should be in accordance with the instructions of the Govt. issued vide letter No.PER (AP)-CF(10)-4/2010 dated 5th August, 2019.
- 5) Bonafide Himachali Certificate in case of reserved category candidates.
- 6) Candidates applying under EWS category will have to submit either 'Income & Asset Certificate' or valid BPL Certificate countersigned by B.D.O. along with non- SC/ST/OBC certificate issued by the competent authority on the format prescribed by H.P. Government vide letter No. PER (AP)-C-B(12)-1/2019 dated 11th June,2019.

**Note:- Strike out whichever is not applicable.**

**Post Details**

Sno.	Name of dept	Name of post	No. of posts	Category Wise No. Of Posts	Pay scale
1	HP STATE POLLUTION CONTROL BOARD	JUNIOR SCIENTIFIC OFFICER	14	UNRESERVED =5, UNRESERVED(EX-SERVICEMEN OF HP (AFTER COMPLETION FULL TENURE OR ON MEDICAL GROUND)) =3(INCLUDING 1 BACKLOG POST), SCHEDULED CASTE OF HP =2, SCHEDULED TRIBE OF HP =1, O B C OF HP =1, ECONOMICALLY WEAKER SECTION OF H.P. =2	Pay Band Level - 12 (Rs. 43000 - 136000)

**Essential Qualification(s)**

1<sup>st</sup> Class M.Sc. Degree in Environmental Science/Chemistry/ Micro-Biology with a Bachelor's Degree in Basic Science from a recognized university/ institution as a regular student.

**Desirable Qualification**

Knowledge of customs, manners and dialects of Himachal Pradesh and suitability for appointment in the peculiar conditions, prevailing in Himachal Pradesh.

**AGE:- Between 18 years to 45 years.**

As mentioned against the post Clarification:-

1. Five years relaxation in upper age limit is admissible only to the bonafide S.C. of H.P. / S.T. of H.P. / O.B.C.

of H.P. /W.F.F. of H.P. / Persons with disabilities of Himachal Pradesh. For H.P. Govt. employees and Ex-Servicemen of H.P.; age relaxation is as per Government's instructions issued from time to time. The age relaxation for these categories is available only if there is a post reserved for these categories.

2. Age of a candidate shall be reckoned as on **01.01.2023**.

#### **ELIGIBILITY CONDITIONS:-**

1. The date of determining the eligibility of all candidates in terms of essential qualification(s), experience etc., if any, shall be reckoned as on the closing date for submission of Online Recruitment Applications through ORA portal.
2. The reserved category candidates falling under vertical reservation i.e. S.C. / S.T. /O.B.C./E.W.S. who are appointed on their own merit and not owing to reservation will not be adjusted against reserved points and they will be adjusted against unreserved points. The S.C. / S.T. candidate appointed on their own merit (by direct recruitment or promotion) and adjusted against unreserved points will retain their status of S.C. / S.T. and will be eligible to get benefit of reservation in future / further promotions, if any. However, only such S.C. / S.T. / O.B.C. / E.W.S. candidates falling under vertical reservation who are selected on the same standard as applied to general candidates shall not be adjusted against reserved vacancies. In other words, when a relaxed standard is applied at any stage of selection process in selecting S.C. / S.T. / O.B.C. / E.W.S. candidates, for example in the age-limit, experience, qualification, permitted number of chances in written examination (screening test / written examination), extended zone of consideration larger than what is provided for general category candidates etc., the S.C. / S.T. / O.B.C. / E.W.S. candidates are to be counted against reserved vacancies. Such candidates would be deemed as unavailable for consideration against unreserved vacancies in accordance with the instructions of the Government (in the Department of Personnel) issued vide letter No. PER (AP)- C-F (1)-2/2001 dated 12th November, 2014. The candidates belonging to reserved categories falling under horizontal reservation i.e. Ex-servicemen / Wards of Ex-servicemen, Children / Grand Children of Freedom Fighters (W.F.F.), Persons with Disabilities and Distinguished Sportspersons who acquire merit / marks on at par with the purely general candidates shall not be selected / appointed against general / unreserved posts and will be adjusted against the post reserved for respective category falling under horizontal reservation. However, it does not debar or preclude a candidate falling under vertical / horizontal reservation from applying and competing for any unreserved post subject to his / her eligibility and clearing the written test / personality test successfully without any relaxation.
3. For recruitment to the post(s) to be filled up on the basis of experience, it will be necessary for the candidates to have the required experience for determining his/ her eligibility after acquiring the requisite essential educational qualification(s) or as per the notified provision(s) of the Recruitment & Promotion Rules, as the case may be.
4. The decision of the Commission regarding eligibility etc. of a candidate for admission to Personality Test or selection will be final and no correspondence / personal enquiries will be entertained.
5. Onus of proving that a candidate has acquired requisite degree/ essential qualification by the stipulated date, shall be on the candidate and in the absence of proof to the contrary, the date as mentioned on the face of certificate/ degree or the date of issue of certificate/degree shall be taken as date of acquiring essential educational qualification. No extra opportunity shall be provided to the candidates to produce appropriate certificates at the time of personality test(s).
6. In respect of equivalent clause in Essential Qualifications, if a candidate is claiming a particular qualification as equivalent qualification as per the requirement of advertisement, then the candidate is required to produce

order/ letter in this regard, indicating the Authority (with number and date) under which it has been so treated otherwise the candidature/Online Application is liable to be rejected.

#### HOW TO APPLY:-

Detailed instructions for filling up Online Recruitment Applications (ORA) are available on the website of the Commission. The Candidate should adhere to following points:-

1. Desirous/ eligible candidates must have to apply online through official website of the Commission <http://www.hppsc.hp.gov.in/hppsc>. Applications received through any other mode would not be accepted and will be rejected straightway.
2. The candidates should exercise due care while entering their Mobile Numbers and e-mail IDs in the Online Recruitment Applications (ORA) for immediate intimation with regard to their application.
3. The desirous & eligible candidate may visit the official website of the Commission (<http://www.hppsc.hp.gov.in/hppsc>) and click on the link "Apply Online" on the Home Page. The candidate will register and create his/ her profile on 'One Time Registration' and after logging into his/ her account in OTR. the list of advertisements will be displayed to the candidate on dashboard. Candidate will apply for a particular post through portal. The application of the candidate will be submitted only after uploading of requisite documents as per advertisement. Before submission of application the candidate will be shown the preview of uploaded documents and he/she shall give an undertaking/ declaration that:-

"It is certified that I have checked the preview of all the requisite uploaded documents and I am satisfied that documents are legible, readable and true. That I shall not object to rejection of my candidature based on the sole reason of uploaded documents being non readable/ poor quality of scanning." Online Recruitment Application once submitted shall not be allowed any change.

4. No representation / correspondence will be entertained against final rejection of candidature.

#### **EXAMINATION FEES:-**

The detail of fee for respective categories is as under:-

Sr. No.	Category	Examination Fees
1.	General Category {including General Physically Disabled, i.e. Orthopedically disabled, Deaf & Dumb, Hearing impaired/ Autism, Intellectual Disability or Multiple Disability/ Economically Weaker Section (EWS)/W.F.F. of HP/ Ex-Servicemen of HP relieved from Defence Services on their own request before completion of normal tenure, General wards of Ex-SM of H.P., i.e. Dependent sons of Ex-SM of H.P.}	Rs.400/-
2.	Candidates of Other States (including reserved category(s) candidates of other states)	Rs.400/-
3.	S.C. of H.P. /S.T. of H.P. /O.B.C. of H.P./ EWS (Covered under BPL)/ (including S.C. /S.T. /O.B.C. Ex-Servicemen of H.P. relieved from Defence Services on their own requests before completion of normal tenure and SC/ ST/ OBC wards of Ex-SM of H.P., i.e. Dependent sons of Ex-SM of H.P.)	Rs.100/-
4.	Ex-Servicemen of H.P. (Ex-Servicemen, who are relieved from Defence Services after completion of normal tenure)/ Blind/Visually Impaired of H.P./Female Candidates.	No Fee

NOTE:-1 Female candidate shall be exempted from the examination fee in accordance with the instructions of the Government (in the Department of Personnel) issued vide letter No Per (AP- B) B (15)-13/2019 dated 01st January, 2020.

NOTE:-2 The candidates belonging to unreserved-BPL of H.P. category and intends to apply under EWSs of H.P. category, will be entitled for fee concession, i.e. 1/4th of the fee prescribed for unreserved category candidates. Rest of the EWSs candidates, who are not falling within BPL of H.P. category, shall have to pay fee as applicable for unreserved category. Therefore, EWS category is further categorized into two sub categories, i.e. EWS-BPL of H.P. and EWS of H.P. for the purpose of examination fee.

NOTE:-3 The candidates who belongs to any of the reserved category and there is no post reserved for such category but the candidates claiming fee concession available to them shall have to upload the category certificate in support of their claim.

### **MODE OF PAYMENT :**

The desirous & eligible candidates shall pay the examination fee fixed category-wise online by Debit Card/Credit Card/Internet Banking through “e Payment Gateway”, as the case may be, on or before the prescribed closing date for submission of Online Recruitment Applications (ORA). While making payment through “e-Payment Gateway” the candidate(s) shall pay the fixed amount through Debit Card/Credit Card/Internet Banking only after accepting the “Terms and Conditions to apply online”. Fee once paid shall not be refunded under any circumstance nor can the fee be held in reserve for any other examination or selection. Before applying online, all candidates are advised to go through detailed instructions given on the above mentioned website.

NOTE:- Candidates should note that payment of fee can be made only through the modes prescribed above. Payment of fee through any other mode is neither valid nor acceptable. Applications submitted without the prescribed fee/mode shall be summarily rejected.

### **Examination Stations/Cities**

DHARAMSHALA, MANDI, SHIMLA

Note –I: The centre(s) of holding the examination(s) is/are liable to be changed at the discretion of the Commission as the circumstances warrant. However, every effort will be made to allot the examination centre(s) of their choice to the candidates. But, the Commission may, at its discretion, allot a different centre to a candidate wherever required.

Note –II: In case of CBT (Computer Based Test) examination centre(s) shall be allotted to the candidates at the discretion of the Commission i.e. on the basis of availability of Computer Test Lab, anywhere in the State of H.P.

### **SELECTION PROCESS:-**

Stage	Stage Name
1	SCREENING / PRELIMINARY EXAM
2	PERSONALITY TEST

### **COMPUTER BASED TEST /OFFLINE TEST (OBJECTIVE OR DESCRIPTIVE/ EXAMINATION/ PERSONALITY TEST/ FINAL SELECTION:-**

1 (i) In cases where the number of eligible candidates for recruitment to the post(s) advertised by the Commission is inordinately large, the Commission may limit / shortlist the number of eligible candidates to be called for personality test(s) by subjecting them to either Computer based Screening Test (objective-type) or Offline Screening Test (objective / descriptive) of two hours duration. Marks obtained in the Screening Test are only meant to short list the number of candidates for personality test(s) and are in no way to be presumed by the candidates as being their merit for final selection. **Minimum pass marks in Computer Based Test / Offline Test (objective or descriptive) are 25% for the**

**candidates of General category and 20% for the candidates of reserved categories.** Any correlation drawn by the candidates between their score in the Screening Test and final merit at a later stage is completely unwarranted. No representation(s) shall be entertained in this regard. Final selection of a candidate will be made solely on the basis of his/her performance in the Personality Test, which will be of maximum 100 marks. The minimum pass marks in personality test are 45 for the candidates of general category and 35 marks for the candidates of reserved categories.

- (ii) (a) Where selection is to be made on the basis of performance of the candidates having qualified the Computer Based Test / Offline Test (objective or descriptive), before the Personality Test Board, a candidate scoring more marks in the Personality Test shall be placed above the candidate scoring lesser marks in the Personality Test. If the candidates will score equal marks in the Personality Test, then a candidate securing more marks in the Computer Based Test / Offline Test (objective or descriptive) will be placed above the candidate securing lesser marks in the Computer Based Test / Offline Test (objective / descriptive). In case the marks of Computer Based Test / Offline Test (objective or descriptive) are equal then the candidate who is senior in age will be placed above the candidate junior in age
- (b) Where selection is to be made purely on the basis of performance of the candidates before the Personality Test Board, a candidate scoring more marks in the Personality Test shall be placed above the candidate scoring lesser marks in the Personality Test. If the candidates will score equal marks in the Personality Test, then a candidate who is senior in age will be placed above the candidate junior in age.
- (iii) In the Computer Based Test (CBT) (objective type) there will be 100 questions of 01 mark each on the basis of syllabus approved by the Commission for the test. Each question will be followed by four (a, b, c, d) answer options. The candidate will have to click on the circle adjacent to the option he / she thinks is correct. The answer key of CBT (objective type) shall be uploaded online on the 'MY EXAMINATIONMY ONLINE REVIEW in the User IDs of all appeared candidates immediately after its conduct for inviting objection(s) for which 03 (three) days time from the day of publishing of answer key (day of publishing of the answer key plus 3 (three) next days upto 11.59 P.M. of the last date of receipt of objections after which the link will be disabled) shall be given to them to submit their objection(s) in online mode only. Objection(s) submitted in any other mode will not be entertained. The received objection(s), if any, will be got verified from the concerned Subject Expert / Paper Setter. Based on the opinion / decision of the concerned Subject Expert / Paper Setter to the objection(s) raised by the candidates the revised answer key shall be prepared & finalized. After finalization of answer key category-wise zone of consideration in the ratio of 1:4 in the case of 20 & above category-wise posts advertised, in the ratio of 1:5 in the case of 11 to 19 category-wise posts advertised and in the ratio of 1:6 + 3 in the case of 10 or less than 10 category-wise posts advertised will be prepared and provided by the Secrecy Cell on the basis of performance of the candidates in the CBT to check their eligibility by the Branch responsible for making direct recruitment on the basis of documents uploaded by them on the OTRS portal submitted on the day of CBT. In case the number of candidate(s) to be declared qualified for personality test fall(s) below the prescribed ratio then to meet this shortfall an additional category wise zone of consideration as per requirement shall be prepared by the Secrecy Cell. In respect of the scrapped question(s) no credit to appeared candidates shall be given. The final answer key along with question paper shall be uploaded on the website of the Commission immediately after the declaration of the result of the CBT. No objection(s) / representation(s) shall be entertained against the final answer key.
- (iv) In the offline Screening Test (objective type) (except Preliminary Examinations) there will be 100 questions of 01 mark each on the basis of syllabus approved by the Commission for the test. Each question will be followed by four (a, b, c, d) answer options. The candidate will have to encircle / blacken the option he / she thinks is right / correct on the OMR answer sheet with blue / black ball pen. The answer key of offline Screening Test (objective type) shall be uploaded on the website of the Commission immediately after the conduct of offline screening test for inviting objections from the

appeared candidates for which 07 (seven) days time (day of publishing the key plus seven days upto 05.00 P.M. of the prescribed last date of receipt of objections) shall be given. The received objection(s), if any, will be got verified from the concerned Subject Expert / Paper Setter. Based on the opinion / decision of the concerned Subject Expert / Paper Setter to the objection(s) raised by the candidates the revised answer key shall be prepared & finalized. After finalization of answer key the OMR answer sheets of the candidates who appeared in the offline Screening Test shall be scanned in the OMR Scanner and evaluated by using the final answer key to prepare a category-wise zone of consideration in the ratio of 1:4 in the case of 20 & above category-wise posts advertised, in the ratio of 1:5 in the case of 11 to 19 category-wise posts advertised and in the ratio of 1:6 + 3 in the case of 10 or less than 10 category-wise posts advertised will be prepared by the Secrecy Cell on the basis of performance of the candidates in the offline Screening Test, to check their eligibility by the Branch responsible for making direct recruitment on the basis of documents uploaded by them on the OTRS portal submitted on the day of offline Screening Test. In case the number of candidate(s) to be declared qualified for personality test fall(s) below the prescribed ratio i.e. six candidates for a single post and three candidates for every subsequent post then to meet this shortfall an additional zone of consideration as per requirement shall be prepared by the Secrecy Cell. In respect of scrapped question(s) no credit to appeared candidates shall be given. The final answer key shall be uploaded on the website of the Commission immediately after the declaration of the result of the offline screening Test. No objection(s) / representation(s) shall be entertained against the final answer key.

(v) There will be negative marking for incorrect answers (as detailed below) for all questions:-

- a. There are four alternatives for the answers to every question. For each question for which a wrong answer has been given by the candidate, one fourth (0.25) of the marks assigned to that question will be deducted as penalty
- b. If a candidate gives more than one answer, it will be treated as a wrong answer even if one of the given answers happen to be correct and there will be same penalty as above for that question.
- c. If a question is left blank i.e. no answer is given by the candidate, there will be no penalty for that question.
- d. Where there will be two correct answers instead of one correct answer out of four options of a question, all those candidates who will click / encode any one of these two correct answers will be awarded marks allotted to that question.

2. (i) The marks of all candidates (successful & unsuccessful) obtained by them in the screening test (CBT / Offline) / written (Preliminary & Main) examinations and Personality Tests (if appeared) including cut off marks in their category shall be made available in their login / User IDs by the Computer Cell on receipt of the same from the officer(s) dealing with Secrecy after declaration of the final result.

(ii) For more information of candidates, HPPSC (PROCEDURE & TRANSACTION OF BUSINESS AND PROCEDURE FOR THE CONDUCT OF EXAMINATIONS & PERSONALITY TESTS ETC) RULES, 2016 available on Commission's website.

(iii) The eligibility of candidate(s) called for the Personality Test will be determined on the basis of original documents produced on the day of Personality Test and the Commission will not be responsible if the candidature of any candidate is rejected at that stage or at the time of verification by the Appointing Authority. As such, admission to the Screening Test/ Examination/ Personality Test shall be purely provisional.

(iv) Summoning of the candidate(s) for Personality Test; conveys no assurance whatsoever that they will be selected or recommended. Appointment orders to the selected candidate(s) will be issued by the appropriate Appointing Authority.

**(v) If any person with disability requires scribe/ reader, having disability of 40% or more, he / she has to request for the same in writing to the Commission along with copy of disability certificate issued by the competent authority at**

least seven days prior to the screening test (Computer Based Test/ Offline Test) for the concerned post. Such applications will be entertained on merit and as per rules.

(vi). Re-checking/ re-evaluation, for the written examination(s)/ Screening Tests (Computer Based Test/ Offline Test) will not be allowed in any case.

(vii) Disputes, if any, shall be subject to Court jurisdiction at Shimla.

## **Syllabus:-**

The CBTs/ Offline objective type screening test shall be of two hour's duration consisting of 100 Multiple Choice Questions (MCQ) from the syllabus as detailed below:-

### **A. Common Syllabus:-**

(45 Marks)

Definition and sources of pollution, Different types of pollution, Environmental segments. Composition of the atmosphere, Chemical composition of Air, Chemical and photochemical reactions in the atmosphere, Types and sources of water, air & soil pollution, Oxides of C,N,S and their effects on flora and fauna, Acid-rain, Photochemical smog formation, Green house effects (global warming and ozone depletion), Introduction to analytical methods for monitoring and analysis of water, air and soil pollution, Noise pollution, Soil composition, Physical and chemical characteristics, Micro and macro nutrients, Soil pollution-fertilizers and pesticides, Bio-remediation and bio-restoration of contaminated soils.

Hydrological cycle, Water pollution: inorganic, organic, pesticides, industrial and radioactive materials, oil spills and oil pollutants, Eutrophication and its impact on organisms and communities, Impact of heavy metals, halogens, radio-nucleotides on aquatic flora and fauna, Aerobic treatment of waste water (Trickling Filters, Rotating Biological Contractors, Fluidized bed reactors, Packed bed reactors), Anaerobic Baffled Digesters, Up flow Anaerobic Sludge blanket reactors, and Industrial waste water treatment, Advanced waste water treatment for removal of major pollutants, Emerging biotechnological and Nano-technological processes in waste water treatment.

Chemical kinetics, Alcohols, Phenols, Ether, Aldehydes and Ketones, Basic principles of thermodynamics, Chemical & Ionic Equilibrium, Solutions and Electrochemistry, Carbohydrates, Periodic properties of elements, Acid and Bases, Basic concepts of organic reactions, Redox Reactions.

Basic Principles of spectroscopy, Principle, working and applications of UV, Visible IR, H-NMR for the determination of structure of simple organic compounds, Spectrophotometer, Flame Photometer, Atomic Absorption Spectrophotometer, GC, GC-MS, HPLC, Chromatography (Paper, TLC, Gel Filtration Ion-exchange Chromatography, Reverse phase chromatography, Hydrophobic interactions, Affinity chromatography, X-ray Diffraction, Microscopy, Electron Microscopy: SEM, TEM, AFM, Electrophoresis, Centrifugation.

Statistical analysis of data, Types and source of errors, Propagation of errors, Detection and minimization of various types of errors, Uncertainty, Accuracy and precision, Average and standard deviation, Variance and confidence interval, Tests of significance (F-test, t-test and paired t-test), Criteria for the rejection of analytical data (4d rule, 2.5 d rule, Q-test, average deviation and standard deviation), Least-square analysis.

Overview of metabolic processes (catabolic and anabolic), Energy transfer processes, Role and significance of ATP (the biological energy currency), Glycolysis, TCA Cycle, Pentose Phosphate Pathway, Gluco-genesis, ETC and oxidative phosphorylation, Metabolism of proteins and lipids, their structure, nomenclature and properties, Biosynthesis of proteins and glycerides, Acyl-glycerol, Phospho-glycerides, Sphingolipids, Glycosphingolipids Catabolism of fatty acids.

Amino acids as building block of proteins, their structure and classification and chemical properties, Simple peptides, Structure of peptide bond, Organizational levels of protein structure, Properties of proteins: simple, conjugated, fibrous and globular proteins, Purine and pyrimidine bases of nucleic acids, Base pairing via H-bonding. Structure of ribonucleic acids (RNA) and deoxyribonucleic acids (DNA), Double helix model of DNA and forces responsible for holding it, Chemical and enzymatic hydrolysis of nucleic acids, Replication of DNA, Transcription, Translation and genetic code, Chemical synthesis of mono and tri-nucleoside, Structure, Properties and classification of Porphyrins, Biosynthesis and degradation enzymes: nature, co-enzymes, cofactors and prosthetic groups, classification, factors affecting enzyme activity.



## B. Subject Specific Syllabus:

(25 Marks)

### B.1 Chemistry:

Molecular theory of hetero diatomic molecules, Band theory of bonding in metals, Hydrogen bonding, Solid state chemistry: radius ratio rule, Space lattice (only cubes), Type of unit cell, Bragg's Law, Calculation of density of unit cell, One and two Dimensional solids, Graphite as two dimensional solid and its conducting properties, Fullerene and its applications, Molecular structure and basic quantum chemistry, Schrodinger equation, Interpretation of wave function, Hydrogen atom, Atomic and molecular orbitals, Phase Rule, Equilibrium potential, Electrochemical cells (galvanic and concentration cells), Electrochemical theory of corrosion and protection of corrosion, Surfactants (cationic, anionic and non-ionic detergents), Polymers, Stability of reaction intermediates e.g. carbanions, carbocations and free radicals, Types of organic reactions and mechanism of nucleophilic substitution reactions, Common organic reactions and their mechanism, Stability of cycloalkanes, Resonance concept, Inductive and mesomeric effects, Directive effects, Activating and deactivating group, Hydrogen bonding, Reagents in organic synthesis of selected organic name reactions and their mechanisms, Nucleophilic substitution reaction, Electrophilic and free radical addition reactions, Electrophilic aromatic substitutions reactions, Nucleophilic addition (principles of nucleophilic addition to carbonyl groups, reduction & oxidation), Elimination reactions, E-Z and R, S Nomenclature, Optical isomerism of organic compounds containing one chiral centre, Examples of optically active compounds without chirality, Conformations of n-butane, Concept of aromaticity, properties of conjugated systems, Group theory, Non-aqueous solvents, Inorganic hydrides, Pericyclic reactions.

### B.2 Environmental Science:-

Environmental geoscience and geology, Geomorphological processes, Environmental geochemistry, Concept and scope of ecology and biological diversity, Ecosystem concepts and dynamics, Study of different ecosystems, Disaster mitigation and management, Environmental laws, policies and regulations, Environmental treaties and conventions, Natural resources-laws, conservation strategy and management, Thermal and radiation pollution, Concept of ecotoxicology and radiation impacts, Occupational health, safety & regulation, Effect of radiation at molecular level, Principles and applications of green technology, Environmental Impact Assessment: methodology, prediction and assessment of impacts, public participation, Environmental management and ISO certification, Microwave sensing, Digital image processing and applications of remote sensing and GIS in environmental management, Radiation detectors and monitors, Judicial activism and environmental protection, Status and distribution of wildlife in India, Environmental economy, Sustainable development, Green economy, Environmental health, Biosphere and its evolution and major biomes in India, Biogeography, Advances in environmental biology, Clean technology, Environment audit.

### B.3 Microbiology:-

Scope and history of microbiology, Staining and microscopy, Laboratory techniques in microbiology, Evolutionary link of prokaryotes, Morphology and ultrastructure of bacteria, Microbial growth and reproduction, Sterilization techniques, Nutritional requirement of microbial growth, Microbial genetics, Genome of prokaryote Eukaryote (Fungi) and viruses, Genetic elements, Extra chromosomal DNA in bacteria and eukaryotic cells, Gene expression and regulation, Genetic recombination in bacteria, Gene sequencing, The nature of Genetic material, replication, History and scope of recombinant DNA technology, Cloning and expression vectors, DNA cloning strategies, Nucleic acid plotting and hybridization, Expression of clone genes, polymerase chain reaction and site directed mutagenesis, Nomenclature and classification of viruses, Bacterial viruses, Importance and significance of microorganism in food, Microbial spoilage of different types of foods, Fermentation and food preservation methods, Food safety and quality management system, Microbial growth and physiology, Pathways and their significance, Growth kinetics and nutritional classification, Enzymes and microbial metabolism, Bio-synthesis of macromolecules, Microbial biotechnology, Fermentation metabolism, Fermenter/ bioreactor, Design and operation, Fermentation system, Recombinant products, Microbial conversion and their product formation.

20 questions consisting of General Knowledge of Himachal Pradesh.

10 questions consisting of National and International affairs.

### CATEGORY CLAIMS:-

The category of the candidate claimed in the profile before he / she applies for the post shall be treated as final. In case his / her category undergoes a change before the prescribed closing date for submission of online recruitment application through OTRS than such candidate shall have to cancel his / her previous application and apply afresh under the category which he /she intends to claim after updating category in his / her profile. In such a situation the fee deposited by the candidate earlier shall stand forfeited and he / she shall have to deposit fresh fee as is applicable for the category claimed by him / her. However, in case of change of category which is beyond the control of the candidate at any stage during the recruitment

process; provided he / she has not availed any relaxed standards in terms of age, experience, qualification etc., he / she will inform about it to the Commission within 15 days from the date of change of his / her category failing which no such type of request shall be entertained by the Commission. S.C. of Himachal Pradesh / S.T. of Himachal Pradesh / O.B.C. of Himachal Pradesh/ E.W.S. of Himachal Pradesh/ W.F.F. of Himachal Pradesh / Ex-Servicemen of Himachal Pradesh and Physically Disabled of Himachal Pradesh candidates must possess such valid certificate(s) in support of their claims made in the online recruitment applications while applying for the concerned post(s). If any B.P.L. candidate applies for the post reserved for EWS category he/she shall have to submit a valid B.P.L. certificate countersigned by the Block Development Officer and also a non-SC/ST/OBC certificate issued by the competent authority. The benefit of reservation will be admissible on parental basis only. All the candidates belonging to reserved categories are also required to go through the relevant instructions of the Government of Himachal Pradesh issued from time to time in order to ensure that they are eligible under a particular category.

The Statutory certificates like bonafide Himachali, S.C., S.T., W.F.F. etc. issued on parental basis on the prescribed format are of permanent nature and are acceptable to the Commission. The validity of all other category certificate is for six months or one year's. The candidate must ensure that they are in possession of valid category certificate on the date of filling up ORAs and uploaded a valid certificate on the ORTS portal.

1. O.B.C. of H.P. (OTHER BACKWARD CLASSES OF HIMACHAL PRADESH):-

The candidates belonging to O.B.C. of H.P. category must produce O.B.C. certificate(s) on the prescribed format valid till their relevant term of the Financial Year (i.e. 1 st April to 31 st March) as notified by the Government of Himachal Pradesh from time to time. Candidates must have a valid O.B.C. Certificate covering the entire period from last date of submission of Online Recruitment Applications till date of Personality Test/ evaluation along with an undertaking that his / her status as O.B.C. has not been changed and he / she has not been excluded from the category of O.B.C. of H.P. on account of being covered under creamy layer.

2. EX-SERVICEMEN OF HIMACHAL PRADESH:-

1. The candidates belonging to Ex-Servicemen of Himachal Pradesh will have to furnish Discharge Certificate and full detail in respect of their P.P.O. No., Rank, and date of retirement from the Defence Services to claim the benefit of reservation for the category of Ex-Serviceman of Himachal Pradesh. The Short Service Commissioned Officers (SSCOs) released on or after dated 13.02.2020 shall also upload copy of proof of having received gratuity.
2. The persons serving in the Armed Forces of the Union, who on retirement from service, would come under the category of "Ex-Serviceman" may be permitted to apply for re-employment one year before the completion of the specified terms of engagement and avail themselves of all concessions available to ex-serviceman but shall not be permitted to leave the uniform until they complete the specified terms of engagement in the Armed Forces of the Union.

3. WARDS OF EX-SERVICEMEN OF HIMACHAL PRADESH, i.e. DEPENDENT SONS, DAUGHTERS AND WIVES OF EX-SM OF H.P.:-

Dependent sons, daughters & wives of Ex-Servicemen of Himachal Pradesh (Wards of Ex-Servicemen of Himachal Pradesh) may apply against the posts specifically reserved for Wards of Ex-Servicemen category (i.e. Dependent sons, daughters and wives) and not against the posts reserved for Ex-Servicemen of H.P. in order to avoid rejection of their candidature at any later stage for the concerned posts. Candidates belonging to Wards of Ex-Servicemen category will have to submit a Dependent Certificate issued by the competent authority and a latest affidavit duly attested by the authority authorized under the Indian Oath Act to the effect that no person in the family has been rehabilitated through employment against the posts reserved for Ex-Servicemen with the H.P. Govt./ Corporation/ Board/Autonomous Body of H.P. as well as Central and other State/ Union Territory Government or P.S.U./ Autonomous Body / Banks etc. under the control of the said Central or other State / Union Territory Government. The daughters of Ex-Servicemen will also have to submit an undertaking to the effect that she is un-married and dependent upon her father in support of her category claim on the day of Personality Test. Married daughters will be admitted provisionally against the posts reserved for Ward of Ex. Serviceman on production of provisional Ward of Ex. Servicemen certificate issued by the competent authority as per instructions of the Govt. (Department of Personnel) Himachal Pradesh letter No. PER(AP)-C-B(12)-1/2013 dated 18th March, 2020.

4. W.F.F. OF H.P. (WARDS OF FREEDOM FIGHTERS OF HIMACHAL PRADESH):-

For the posts reserved for Wards of Freedom Fighters of Himachal Pradesh (WFF of H.P.), sons/ grandsons/ daughters/ grand daughters of Freedom Fighters of Himachal Pradesh, who have been appointed on regular basis shall not be entitled for the benefits of reservation provided to the wards of

Freedom fighters in Government services, against the identical posts in the same scale. The employed children/ grand children of Freedom Fighters will be deemed to have been excluded from the definition of Ward of Freedom Fighter for the purpose to this extent. The children/ grand children of Freedom fighters of Himachal Pradesh, who have been appointed in Govt. / Semi Govt. or Private Sector etc. services against the post(s) reserved for the wards of Freedom Fighters on regular basis will remain entitled to compete for higher rank/ grade posts/ services on the basis of reservation earmarked to the wards of Freedom Fighters of Himachal Pradesh. The un-married daughters/ grand daughters will have to submit an affidavit being spinster (un-married) in support of their claim(s) issued by the authority authorized under the Indian Oath Act. Other wise such candidates will be rejected straightway. Married daughters and Married granddaughters will be admitted provisionally against the posts reserved for WFF on production of provisional WFF certificate issued by the competent authority as per instructions of the Govt. (Department of Personnel) Himachal Pradesh letter No. PER(AP)-C-E(3)-1/2020 dated 17th March, 2020.

#### 5. E.W.S. OF H.P. (ECONOMICALLY WEAKER SECTIONS OF H.P.):-

The benefit of reservation under the EWS category (other than SCs / STs / OBCs) in posts under the Government of Himachal Pradesh can be availed against the posts reserved for EWS category on production of an Income and Asset Certificate issued by the competent authority in the State of Government of Himachal Pradesh and also a non-SC / ST / OBC certificate issued by the competent authority. The reservation to the category of EWS and (document to be submitted in support of claim), will be as per instructions issued by the Government of H.P. (in the Department of Personnel) vide letter No.PER(AP)-C-B(12)-1/2019 dated 11 th June, 2019. If a BPL candidate applies for the post reserved for EWS category he / she shall have to submit a valid BPL certificate countersigned by the Block Development Officer and also a non-SC / ST / OBC certificate issued by the competent authority. In case Economically Weaker Section (EWS) candidates is not available for selection. The vacancies will be treated automatically as de-reserved and will be filled up from a non EWS candidate of unreserved category.

#### **FACILITATION COUNTER FOR GUIDANCE OF CANDIDATES:-**

In case of any guidance/ information / clarification regarding Online Recruitment Applications (ORA), candidate scan contact H.P.P.S.C.'s Reception Counter in person or on Toll Free No. 1800-180- 8004 or Ph. No. 0177-2629738 on any working day between 10:00 A.M. to 05:00 P.M. Queries related to online applications can also be mailed by the candidates on e-mail ID [hppsc\\_shimla@msn.com](mailto:hppsc_shimla@msn.com). No candidate will interact directly with the staff in the Recruitment Sections.

#### ADMISSION/ REJECTION:-

1. Incomplete Online Recruitment Applications (ORA) submitted without requisite examination fee/ fictitious fee, scanned photograph & scanned signatures of prescribed size, will be rejected straightway.
2. Online Recruitment Application once submitted shall not be allowed any change.
3. No representation / correspondence will be entertained against final rejection of candidature.
4. Candidates who failed to upload the requisite documents, their candidature will be provisionally rejected. However they will be allowed 7 days time for submitting their representations along with requisite documents either through e-mail, in person or by post.
5. The decision of the Commission as to the eligibility or otherwise of a candidates for admission to interview or selection will be final and no correspondence / personal enquiries will be entertained

**Note: - Original certificates will have to be produced at the time of personality Test. If their claim is found to be incorrect; besides rejection they may render themselves liable to disciplinary action by the Commission.**

#### E- ADMIT CARDS / E-CALL LETTERS:-

No Admit Cards/Call Letters will be sent by post and provisionally admitted candidates will have to download their respective e-Admit Cards/e-Call Letters along with instructions for the concerned post(s) from the official website of the Commission. Therefore, the candidates are advised to remember their User ID(s) and password(s) earlier created by the candidates to log in to download their respective e-Admit Cards/e-Call Letters. The provisionally admitted candidates will have to paste a passport size photograph duly self attested / attested by a Gazetted Officer on the space provided on the downloaded e-Admit Cards, failing which he/she will not be allowed to appear in the Screening Test/ Examination, in any condition/circumstances, whatsoever.

#### CERTIFICATES/ DOCUMENTS TO BE UPLOADED BY THE CANDIDATES:-

The desirous & eligible candidate may visit the official website of the Commission (<http://www.hppsc.hp.gov.in/hppsc>) and click on the link "Apply Online" on the Home Page. The candidate will register and create his/ her profile on 'One Time Registration 'and after logging into his/ her account in OTR. the list of advertisements will be displayed to the candidate on dashboard. Candidate will apply for a particular post through portal. The application of the candidate will be submitted only after uploading of requisite documents as per advertisement.

OTHER CONDITIONS:-

- A. All candidates, whether in Government Service or Government owned Industrial or Public Enterprises or other similar organizations or in private employment should submit their applications online directly to the Commission. Persons already in regular Government service, whether in a permanent or temporary capacity are required to submit a declaration that they have informed in writing to their Head of Office/ Department that they have applied for a particular post. In case, a communication is received from their employer by the Commission withholding permission to any candidate applying for/appearing for the examination, his/her application(s) will be liable to be rejected.
- B. Contract /Casual /adhoc/ daily rated/ work charged employees do not need to produce NOC from the concerned employer. In Government service (regular service) candidates may apply to the Commission along with requisite examination fees with information to their Head of Departments / Employer for issuing NOC.
- C. Any candidates, who are in regular Government Service or Government owned Industrial service, will not be interviewed unless he/she produces NOC from the concerned employer.
- D. It may be ensured by the candidates before submitting the applications that furnishing of false information and documents or suppression of any factual information in the application form would entail disqualification. If the fact that false information / document(s) has been furnished or that there has been suppression of any factual information in the application; comes to the notice at any time during the service of a person, his service would be liable to be terminated.
- E. The candidates applying for the posts should ensure that they fulfill all the eligibility conditions for admission to the examination. Their admission at all stages of Screening Test/ examination for which they are admitted by the Commission, viz., written examination and Personality Test will be purely provisional, subject to their satisfying the prescribed eligibility conditions. If on verification at any time before or after the written examination or Personality Test, it is found that they do not fulfill any of the eligibility conditions; their candidature for the concerned post / examination will be cancelled by the Commission.
- F. A candidate at any stage of examination / selection which shall include final selection and sending recommendation(s) thereof or during the course of examination or any selection process conducted or being conducted may in addition to rendering himself / herself liable to criminal prosecution (in the case of candidate already in service under Government, to disciplinary action under the appropriate rules), be liable to be debarred either permanently or for a specific period from an examination or future examinations or his candidature may be cancelled, w.e.f. the date as decided by the Commission, if he or she is found to be guilty of the following:-
1. obtaining / seeking support for his / her candidature whether in the Examination or Interview by any means; viz, offering illegal gratification to, or applying pressure on, or blackmailing, or threatening to black mail any person connected with the conduct of the examination, etc; or
  2. impersonating; or
  3. procuring impersonation by any person; or
  4. uploading/ submitting false / fabricated documents or documents which have been tampered with; or
  5. making statements which are incorrect or false or flouts any Instructions Guidelines, terms and condition, given in advertisements or instructions communicated in any manner or suppressing therein material information at any stage of selection; or
  6. resorting to the following means in connection with his / her candidature for the examination, namely:-
    - i). obtaining copy of question paper through improper means;
    - ii). finding out the particulars of the persons connected with secret work relating to the Examination; iii). influencing the Examiners; or
  7. Using or attempting to use unfair means in the Examination hall; or
  8. writing obscene matter or drawing obscene sketches in the scripts; or
  9. harassing, threatening or causing physical injury to the staff engaged in the conduct of Examination; or
  10. violating any of the instructions given to the candidates in their admission card or other directives including oral

instructions given by the centre supervisor / superintendent or other staff engaged in the conduct of Examination;  
or

11. misbehaving in the examination hall including tearing of the scripts, provoking fellow examine(s) to boycott Examination, creating a disorderly scene and the like; or
12. being in possession of or using mobile phone, pager, scanner or any electronic equipment or device or any other equipment capable of being used as a communication device during the examination / personality test; or
13. being debarred earlier on the above mentioned grounds by the Union Public Service Commission or any State Public Service Commission including this Commission.
14. attempting to commit or, as the case may be, abetting the Commission of all or any of the acts specified in the foregoing clauses;
15. Provided that no penalty under this Rule shall be imposed except after:-
  - I. giving the candidate an opportunity of making such representation in writing as he / she may wish to make in that behalf; and
  - II. taking into consideration the representation, if any, submitted by the candidate within the period allowed to him / her.

Provided further that the order of debarring or cancellation of candidature shall be passed only after the Commission has considered the matter and approved the proposed punishment of debarring the candidate or cancellation of his / her candidature.

#### CHECKLIST:

VERIFY THE FOLLOWING BEFORE UPLOADING THE ONLINE APPLICATION OR DOCUMENT CERTIFICATES:-

- A. That no column is wrongly filled or kept blank as the information furnished there in would be used to determine the eligibility of candidates to be called for Personality Test.
- B. The desirous & eligible candidate may visit the official website of the Commission (<http://www.hppsc.hp.gov.in/hppsc>) and click on the link "Apply Online" on the Home Page. The candidate will register and create his/ her profile on "One Time Registration" and after logging in to his/ her account in OTRS. The list of advertisements will be displayed to the candidate on dashboard. Candidate will apply for a particular post through portal. The application of the candidate will be submitted only after uploading of requisite documents as per advertisement. Before submission of application the candidate will be shown the preview of uploaded documents and he/shall give an under taking/ declaration that:-

**"It is certified that I have checked the preview of all the requisite uploaded documents and I am satisfied that documents are legible, readable and true. That I shall not object to rejection of my candidature based on the sole reason of uploaded documents being non readable/ poor quality of scanning"** no further opportunity will be given to the candidate to upload of any document after the submission of online recruitment application.

- C. Online Recruitment Application once submitted shall not be allowed any change. No representation / correspondence will be entertained against final rejection of candidature.
- D. That the Following documents/certificates are to be uploaded in support of claims made/ information given in the Online Application:-
  1. Matriculation certificate for age proof.
  2. Degree/ certificate along with Marks Sheets of all years in support of Educational Qualifications. The provisional certificate(s) along with marks sheets of all semesters/ years.
  3. Experience certificate(s) wherever required.
  4. Valid category certificate(s) in support of their eligibility, if any, viz., S.C., S.T., O.B.C., E.W.S., Ex- Servicemen, Ward of Ex. Servicemen, WFF and Persons with Bench mark disabilities etc. All these certificates along with undertaking wherever required, should be on Performa prescribed by the Government of H.P. from time to time. Scheduled Castes, Scheduled Tribes and Other Backward Classes Certificates should be in accordance with the instructions of the Govt. issued vide letter No. PER (AP)-C-F(10)-4/2010 dated 5th August, 2019.
  5. Bonafide Himachali Certificate in case of reserved category candidates.

Candidates applying under EWSs category will have to submit either "**Income & Asset Certificate**" or valid BPL Certificate countersigned by B.D.O. along with non SC/ST/OBC certificate issued by the competent authority on the format prescribed by H.P. Government vide letter No. PER(AP)-C-B(12)-1/2019 dated 11th June, 2019.

## **DISQUALIFICATIONS FOR ADMISSION TO THE EXAMINATION(s):**

No candidate will be eligible for admission to the examination:-

1. If he/she has been dismissed from any previous Govt./ Semi Govt. service;
2. If he/ she has been convicted of any offence involving moral turpitude or has been permanently debarred / disqualified from appearing in any examination or selection;
3. If he/she is found either directly or indirectly influencing the selection process in any manner; or
4. If he/she is an un-discharged insolvent.

## **ABBREVIATIONS:**

HP: Himachal Pradesh, PSC: Public Service Commission, UR: Unreserved, SC: Scheduled Castes of H.P., ST: Scheduled Tribes of H.P., OBC: Other Backward Classes of H.P., BPL: Below Poverty of H.P. EWS: Economically Weaker Section of H.P., as declared by the Govt. of H.P. from time to time, Ex-SM: Ex-Servicemen of H.P., WFF: Wards of Freedom Fighters of H.P., Wards of Ex-SM: Dependent sons, daughters and wives of Ex-SM of H.P., PWDs: Persons with disabilities of H.P., VI: Visually impaired, HI: Hearing Impaired, OTRS: One Time Registration System, NOC: No Objection Certificate and EQ: Essential qualification(s).

Sd/-  
(Divender Kumar Rattan), IAS  
Secretary  
H.P. Public Service Commission  
Tel. No. : 0177-2623786