

HIMACHAL PRADESH
PUBLIC SERVICE COMMISSION

INSTRUCTIONS TO THE CANDIDATES FOR THE POST OF SCIENTIFIC OFFICER (DNA), CLASS-II (GAZETTED) (ON CONTRACT BASIS) IN THE DEPARTMENT OF HOME, H.P., ADVERTISED VIDE ADVERTISEMENT NO. 05/2017 DATED 06-04-2017 ITEM No. III.

On the basis of claim furnished by you in your online recruitment application (ORA), you have been provisionally admitted to appear in the Screening Test for the post of Scientific Officer (DNA), Class-II (Gazetted) (on contract basis) in the department of Home, H.P. and your candidature is liable to be cancelled if you are found to be ineligible for the post(s) at any stage of the selection process or thereafter.

2. Your admission to the Screening Test is purely provisional. As per requirement of **Advertisement No. 05/2017 dated 06-04-2017**, you are required to submit attested photocopies of the following documents alongwith a printout of online recruitment application in support of your eligibility as mentioned in the Advertisement /rules/instructions on the day of screening test i.e. on **20-12-2017** failing which your candidature will stand cancelled automatically:-

(i) **Matriculation certificate or other equivalent certificate showing your date of birth.**

(ii) **M.Sc. 2nd Class in Molecular Biology/Human Biology/Human Genetics/Bio-Technology/Microbiology/Forensic Science/Physical Anthropology/Bio-Chemistry or equivalent from a recognized university with evidence of specialization in DNA analysis / Profiling or its equivalent from a recognized University.**

(iii) **Three years post M.Sc. experience in research training and analytical work in one of the above or allied subjects. (Research work done for doing Ph.D. degree shall be counted in total experience).**

(iv) **Scheduled Caste/Scheduled Tribe/ WFF/ latest (valid) OBC certificate on the prescribed form, if you belong to any of these categories. The SC/ ST/ latest OBC certificate should be on parental basis. The candidates belonging to Ex-Servicemen category shall bring discharge certificate & other related document issued by the competent authority as a proof of being Ex-Serviceman. Similarly, candidate belonging to physically handicapped/Hearing Speech Handicapped of H.P. (having not less than 40 % disability) should also submit valid proof issued by the competent authority.**

(v) **Any other certificate of your academic qualifications/ experience etc. in support of your eligibility for the post as required in the Commission's Advertisement.**

3 Your eligibility in terms of Essential Qualification and experience etc. shall be reckoned as on the last /normal date of receipt of online recruitment application i.e. **25 -04-2017**.

4 Onus of proving that you are eligible for the concerned post lie upon you only. If the date of notification / declaration of result is not indicated in the certificate /degree/marks list, the date of issue of certificate/degree/marks list shall be deemed as date of acquiring essential qualifications. If you fail to produce any of the certificate(s) which is necessary to determine your eligibility and /or you are found in eligible vis-à-vis age, qualification and experience etc., your candidature is liable to be cancelled.

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5 THE SCREENING TEST WILL BE OF 02 HOURS DURATION CONSISTING OF 100 MULTIPLE CHOICE QUESTIONS.

<p>1. History and Development of Forensic Science, Definition of Forensic Science, Need of Forensic Science, Basic Principles of Forensic Science (Law of Individuality, Principle of exchange, law of probability). Biological evidence: Importance, nature, location, collection and evaluation. Forensic significance of body fluids as blood, semen, saliva, sweat, milk and urine, their collection and identification. Preparation of solutions, buffers, use of buffers in DNA analysis. Concept of Normality, Molarity, Molality and their calculations.</p>	<p>30 questions of 30 marks</p>
<p>2. Electrophoresis Theory and General Principles, Various factors affecting electrophoresis, Low and High Voltage electrophoresis, Horizontal and Vertical Electrophoresis. Various electrophoresis techniques- Immuno-electrophoresis, Native PAGE, Sodium dodecyl sulphate (SDS-PAGE) polyacrylamide gel electrophoresis, Iso-electric focusing (IEF), Capillary electrophoresis-Theory and basic principles, Instrumentation, Forensic applications. DNA Profiling: Introduction, History of DNA Typing, human genetics, mitosis, meiosis, heredity, alleles, mutations and population genetics, Hardy Weinberg law, molecular biology of DNA, variations, polymorphism, RFLP analysis, PCR amplifications, VNTRs, STRs, Mitochondrial DNA, SNPs, Sampling in forensic DNA analysis, DNA, Multiplex PCR, STR Markers used in Forensic DNA analysis, Commercially available STR Kits, Stutter products, non-template addition, microvariants, null alleles and mutation rates, issue of degraded DNA, PCR inhibition, contamination, mixed samples and low copy number. Use of SNPs and other bi-allelic markers in forensic DNA analysis. Y-STR based testing. Non-human DNA testing and microbial forensics. Use of Capillary electrophoresis in forensic DNA profiling, validated capillary electrophoresis platforms for forensic DNA, fluorescent labeling in multiplex kits, fluorescent detection. Instrumentation for forensic STR typing, ABI 310,3100,3130,3500 etc. STR genotyping issue. Evaluation of results, frequency estimate calculations, interpretations, allele frequency determination, match probability, DNA data bases CODIS, GenBank etc. STR population data base analysis, likelihood ratios, source attribution, analysis mixed DNA profiles, kinship and parentage testing, probability of paternity etc. DNA analysis in mass disasters.</p>	<p>50 questions of 50 marks</p>
<p>3. General Knowledge (National & International level)</p>	<p>10 questions of 10 marks</p>
<p>4. General Knowledge of H.P.</p>	<p>10 question of 10 marks</p>

6 **There will be negative marking (Penalty) for wrong (incorrect) Answers (as detailed below) for all questions:**

- (i) **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.**
- (ii) **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.**
- (iii) **If a question is left blank i.e. no answer is given by the candidate, there will be no penalty for that question.**

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- 7 You are advised to reach the examination centre on the scheduled date at least **30 minutes** before the commencement of the Screening Test. The candidate shall enter the examination hall/ room 20 minutes before the scheduled time for the commencement of the examination. You will not be allowed to enter the examination Hall **10 minutes** after the commencement of the Screening Test and will not be allowed to leave the Examination Hall till the expiry of full allotted time.
- 8 You are advised to write/encode the OMR answer sheet with black/blue ball pen irrespective of the instructions contained on the answer sheet, if any. No erasing/ fluid is allowed in the OMR answer sheet.
- 9 You should bring your e-admission letter-cum-identity card downloaded from the website of the Commission in the examination centre. The candidate should paste latest passport size photograph duly attested on the e-admission identity card in the space provided. No candidate will be allowed / entertained to appear in the screening test without photograph.
- 10 Please mention your category in the OMR answer sheet as already claimed by you in your online recruitment application (ORA) as well as shown on your admit card. Category once claimed will not be allowed to be changed after screening test.
- 11 No T.A. / D.A. will be paid for appearing in the Screening Test.
- 12 The answer key of this screening test shall be displayed on the official website of the Commission after the screening test. The objections, if any, received within seven days will only be entertained.

NOTE:- NO ELECTRONIC GADGET/MOBILE PHONE/ANY OTHER COMMUNICATIONS / ELECTRONICS DEVICE IS ALLOWED IN THE PREMISES /EXAMINATION HALL, THEREFORE, THE CANDIDATE SHOULD ENSURE THAT THEY ARE NOT IN POSSESSION OF ANY KIND OF SUCH DEVICES BEFORE THEY ENTER THE PREMISES/ EXAMINATION HALL.