

HARYANA PUBLIC SERVICE COMMISSION
Bays No. 1-10, Block-B, Sector-4, Panchkula

Advt. No. 5

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INSTRUCTIONS FOR CANDIDATES

ASSISTANT ENGINEERS (CIVIL) & (MECHANICAL) CLASS- II EXAMINATION-2015

A competitive examination for recruitment to the posts of **Assistant Engineer (Civil) & (Mechanical) Class-II** in Public Health Engineering Department, Haryana, will be held by the Haryana Public Service Commission at Panchkula or any where in the State of Haryana in accordance with the Punjab Service of Engineers, Class-II PWD (Public Health) Rules 1966. The syllabus for this examination as prescribed by the Govt. is appended and the Examination will be held in accordance with this syllabus. The number & category wise break-up of posts is as under:-

Sr. No.	Name of the post	Gen.	SC of Haryana	BC – A of Haryana	BC – B of Haryana	EBP (GC) of Haryana	ESM of Haryana	Total
1	Assistant Engineer (Civil)	12	02	06	01	03	03	27
2	Assistant Engineer (Mechanical)	02	-	-	-	-	-	02

Notes:

I *2% reservation will be available to Freedom Fighters / their Children / Grand Children in case of non availability of suitable Ex-Servicemen / Dependents of ESM / Backward Class.*

II *46 posts (44 for Civil and 2 for Mechanical) of Assistant Engineer (Class – II) in Public Health Engineering Department, Haryana advertised vide Advt. No. 1/2014 (Cat. 3 & 4) published on 29.04.2014 in Indian Express, Hindustan Times, The Tribune, Dainik Bhaskar & Amar Ujala have been withdrawn by the Govt. vide letter No. 2/23/2013-PH-5 dated 18.06.2015. However, the candidates who had applied earlier against Advt. No. 1/2014 (Cat. 3 & 4) need not to apply again, if they were eligible according to the earlier advertisement. If any candidate wants to any change in category, qualification, contact No. and address, he / she have to login the Commission's website. This option is only for the candidates who had earlier applied in pursuance of Advt. No. 1/2014 (cat. 3 & 4).*

It is also clarified that some of the candidates (178 candidates for the posts of Civil and 115 candidates for the posts of Mechanical) have not sent hard copies of their application forms. Such candidates are again directed to send hard copies of their application forms failing which their candidature will not be considered by the Commission.

III **For the BC category candidates who had applied earlier for A. E. (Civil):-**

The BC category candidates who had applied earlier in response to the Advt. No. 1/2014 (Cat. 3) for the posts of A. E. (Civil), are hereby informed that the Govt. has now bifurcated the BC category into BC-A & BC-B, therefore, their BC category will be bifurcated into BC-A & BC-B, as the case may be, according to the BC certificates submitted by them with the hard copies of their application forms.

IV **For the SBC category candidates who had applied earlier for A. E. (Civil):-**

The candidates who had applied under SBC category for the posts of A.E. (Civil) in pursuance of Advt. No. 1/2014 (Cat. 3) will be treated as candidates under General category provided that if they fulfill the requisite conditions regarding age etc. as meant for candidate of General category except fees.

V For the earlier candidates who had deposited less fees:-

In the earlier advertisement No. 1 / 2014 (cat. 3 & 4), the fees was inadvertently mentioned as ₹ 500/- & ₹ 125/- (₹ 125 for reserved categories & female candidates except PH candidates) whereas the actual fees was ₹ 1000/- & ₹ 250/- (₹ 250 for reserved categories & female candidates) and accordingly the candidates had deposited their fees. Later on, an announcement was issued by the Commission in this regard directing the candidates to deposit their balance fees during the period from 04.06.2014 to 14.06.2014. The said announcement was displayed on Commission's website and also published on 05.06.2014 in the newspapers namely Hindustan Times, Indian Express, The Tribune, Dainik Bhaskar & Amar Ujala. In view of this announcement, some candidates had deposited their balance fees whereas some candidates have yet not deposited the balance fees.

Therefore, all the candidates who have yet not deposited their balance fees of ₹ 500/- & ₹ 125/-, as the case may be, are again directed to deposit their balance fees upto closing date to avoid rejection of their candidature and thereafter, no correspondence in this regard will be entertained by the Commission.

VI For the PH (Ortho) category candidates who had applied earlier for A. E. (Civil):-

The candidature of PH (Ortho) category candidates who had applied in response to the earlier Advt. No. 1 / 2014 (Cat. No. 3) for the posts of A. E. (Civil) will be considered in their original (General, SC, BC etc.) category if they fulfill all the eligibility conditions meant for that category as no post is available for this category in this advertisement.

1. Essential Qualifications:-

(A) Assistant Engineer (Civil)

- (i) Degree of a recognized University or one of the other equivalent qualifications in Civil Engineering specified in Appendix 'B' to the Punjab Service of Engineers Class-II PWD (Public Health) Rules, 1966.
- (ii) Hindi / Sanskrit upto Matric Standard.

Provided that Degree obtained through distance education mode from Universities/Deemed Universities/Technical Institutions is valid qualification for initial recruitment only if such Degree programme of technical education conducted through distance education mode has been approved by the joint Committee of UGC-AICTE-DEC as clarified by the Govt. of Haryana vide its letter No. 42/178/2008-5GSI dated 21.05.2009.

(B) Assistant Engineer (Mechanical)

- (i) Degree of a recognized University or one of the other equivalent qualifications in Mechanical Engineering specified in Appendix 'B' to the Punjab Service of Engineers Class-II PWD (Public Health) Rules, 1966.
- (ii) Hindi / Sanskrit upto Matric Standard.

Provided that Degree obtained through distance education mode from Universities/Deemed Universities/Technical Institutions is valid qualification for initial recruitment only if such Degree programme of technical education conducted through distance education mode has been approved by the joint Committee of UGC-AICTE-DEC as clarified by the Govt. of Haryana vide its letter No. 42/178/2008-5GSI dated 21.05.2009.

2. Age:-

Candidate should not be less than 20 years and not more than 42 years as on **01.08.2015**.

- (a) Upper age limit is relaxable upto 5 years for the Haryana domicile candidates belonging to Scheduled Castes, Backward Classes and EBP (Gen.) category of Haryana only where the posts are reserved for them.
- (b) Upper age limit is relaxable upto 45 years for:-
 - (i) Unmarried women of Haryana only.

- (ii) Wives of disabled Ex-servicemen with disability between 20% to 50% and widows of those Ex-servicemen who killed in action.
- (iii) Women whose husbands have been ordered by civil / criminal Courts to pay maintenance to them, Women whose husbands have remarried, widows, women who are legally separated from their husbands or have been divorced, women living separately from their husbands for more than two years because of desertion, Wives of serving/disabled military personnel and widows of those killed in action. Woman living separately from her husband due to desertion will be required to submit with her application an affidavit to the effect that she has been deserted by her husband, and has been living separately from him for more than two years and this affidavit should be counter-signed by two responsible persons such as members of the Legislative Assembly, Local Bodies, Panchayats and the Bar Association. Where, however, a woman who has remarried, she would not be eligible for the above concession in the matter of age.
- (c) Upper age limit is relaxable for Physically Handicapped category of Haryana by 10 years (15 Years for SCs / BCs of Haryana only).
- (d) Upper age limit is also relaxable (where the posts are reserved):-

For an Ex- military person whether he joined military service before or after the declaration of emergency to the extent of military service added by three years provided he had rendered continuous military service for a period of not less than six months before his release and further provided that he had been released otherwise than by way of dismissal or discharge on account of misconduct or inefficiency. A disabled military person is entitled to exclude from his age the period from the date he was disabled upto the date of his application or till the end of emergency i.e. 10.01.1968.

3. **For evidence of age:** The Matriculation certificate or equivalent academic certificate thereto is the only acceptable document.

4. **Pay Scale: Rs. 9300-34800+5400/- Grade Pay**

On appointment, the candidate would be put under training for a period of three months during which period one would be paid Rs. 14,800/- P.M. (Fixed) plus usual allowances sanctioned by Haryana Govt. After successful completion of the training period, the candidate shall be appointed to H.S.E. Class-II on Ex-Cadre post at an initial salary of ` 14,800/- P.M. plus usual allowances.

5. **Application Fees:-**

The online application fees which is payable at all branches of State Bank of Patiala and State Bank of India is as under:-

Sr. No.	Categories of candidates	Fees(Rs.)
1	(i) For Male candidates of General category including Dependent Son of Ex-servicemen of Haryana (ii) For Male candidates of General and all reserved categories of other States.	1000/-
2	(i) For all Female candidates of General category including Female Dependent of Ex-servicemen of Haryana only. (ii) For Female candidates of General and all reserved categories of other States.	250/-
3	For Male & Female candidates of SC / BC / EBP (GC)/ ESM categories of Haryana only.	250/-
4	For all Physically Handicapped candidates (with at least 40% disability) categories of Haryana only.	NIL

Notes:-

- (i) The person already in Govt. service and person employed in Public Sector Undertakings including Quasi Government Organizations whether in permanent, Quasi permanent or temporary capacity should take print of two sets of their online application form. One set is required to be submitted to their employer for NOC whereas the other is required to be sent to the Commission by the closing date to avoid rejection of their applications. The applications so submitted will be considered provisionally but the set of applications

through their employers should ordinarily reach the Commission's office within a fortnight after the closing date. In cases where the through proper channel application is not received within the above time or if the application is received direct, the candidate will be interviewed only if he produces the permission of his employer at the time of interview.

- (ii) If the employer's permission is not furnished due to the fact that the candidate had resigned after sending the application form, in that case the candidate will be interviewed only if he produces a letter from the employer to the effect that he has resigned from the post and his resignation has been accepted.
- (iii) The candidate who joins service under Government, Quasi Government Organization, Public Sector undertakings after the submission of application form will have to produce "NO OBJECTION CERTIFICATE" from the employer on or before the date of his interview failing which he will not be interviewed.
- (iv) Persons in private employment are not required to produce the employer's permission (NO OBJECTION CERTIFICATE) at the time of interview.
- (v) Government Employees of the Union and other States will not be allowed any benefit of their past Service under their respective Governments.
- (vi) The ex-military persons must furnish the attested copy of discharge certificate indicating therein the date of entry and release from the Army.

6. RESERVATION: The reservation in different categories is to be covered in accordance with the orders/instructions issued by the Haryana Government from time to time.

- (a) It is made clear that the **dependent of ESM candidates** will be considered as **General Category** candidates for all intents and purposes. However in case of non-availability of suitable ex-servicemen, their dependent sons and daughters who fulfil all the conditions of qualifications, age etc. prescribed for posts in question will also be considered on merit against the reserved posts of ESM and this entitlement would be available to one dependent child only.

Candidates claiming dependent sons/daughters of Ex-servicemen must send the latest eligibility certificates issued by the Zila Sainik Board Haryana (specifically indicating the name of post for which the candidate is applying) in support of their claim. None of the persons mentioned below shall fall within the definition of words "**Dependent of Ex-serviceman**" in terms of Haryana Govt. letter No. 12/37/39-GSII dated 21.11.80.

- (i) a person may be working on an ad-hoc basis against the post advertised or somewhere else.
- (ii) a person may be unemployed at the time of making the application but he may have other source of income viz. from agriculture, trade, property, bank balance etc.
- (iii) a person who is a member of the Joint Hindu Family and remains dependent upon the Karta till there is partition in the family or he ceases to be member of the Joint Hindu Family and is obliged to pass on all his income to karta and draws money for his subsistence from the pool of the Joint Hindu Family with the consent of the Karta.
- (iv) a candidate who is member of the Joint Hindu Family is employed on ad-hoc basis but he is otherwise dependent on his father.

Income Limit for DESM :-

According to the instructions issued by the Chief Secretary to Govt. Haryana vide letter No. 12/8/03-4GSII dated 01.12.2003, the person who have income from agriculture, trade, property and bank balance etc. upto ` 6,000/- per month will be considered dependent of ESM for employment.

- (b) Person with disabilities selected on their merit without relaxed standards alongwith other candidates, will not be adjusted against the reserved share of vacancies. The reserved vacancies will be filled up separately from amongst the eligible candidates with disabilities which will thus comprise physically handicapped candidates who are lower in merit than the last candidate in merit list but otherwise found suitable for appointment, if necessary, by relaxed standards. It will apply in case of direct recruitment only, wherever reservation for persons with disabilities is admissible.

- (c) **Details of Note I below the break-up of posts:-**

The reservation to **Freedom Fighter & their Children / Grand Children of Haryana** will be available only if quota reserved for Ex-servicemen or Backward Classes remains unfilled to that extend due to non-availability of suitable Ex-servicemen or their dependents or non-availability

of suitable candidates from Backward Classes. Over all reservation either from the **unfilled vacancies of Ex-servicemen or from the Backward Classes** for Freedom Fighters/their children/grand children will remain limited to 2% only. This benefit will be available to all grand children i.e. sons and daughters of sons and daughters (parental as well as maternal) of the Freedom Fighters.

7. **Scheme of Examination:** The selection of candidates shall be made by the Commission after holding competitive examination as per papers given in Para 10 and the syllabus appended at page No. 7.

A candidate shall not be considered to have qualified for interview by the Commission for appointment unless he obtains not less than forty percent marks in each subject and also not less than fifty percent marks in the aggregate and no candidate who does not obtain the qualifying marks shall be called for interview by the Commission.

Provided further that where a vacancy has been reserved for a person belonging to any Scheduled Caste, Scheduled Tribe or Backward Class, the candidate belonging to the Scheduled Castes, Scheduled Tribes or Backward Classes of Haryana as the case may be, who secures from amongst candidates belonging to scheduled Castes, Scheduled Tribes, or Backward Classes, the highest marks in the aggregate and has qualified for an appointment, shall be selected irrespective of his position with respect to the other candidates.

However, candidates three times of the advertised posts including bracketed candidates, if any, in order of merit of the Examination will be called for interview.

8. **Papers and Syllabus :** The examination will be held on the basis of the syllabus given below:-

(A) CIVIL ENGINEERING			
<u>Sr. No.</u>	<u>Subject</u>	<u>Duration</u>	<u>Marks</u>
<u>Section-I: Objective Papers</u>			
1.	General Ability Test (Part A: General English) (Part B: General Studies)	2 hrs.	200
2.	Civil Engineering Paper-I	2 hrs.	200
3.	Civil Engineering Paper-II	2 hrs.	200
<u>Section –II Conventional Papers</u>			
4.	Civil Engineering Paper-I	3 hrs.	200
5.	Civil Engineering Paper-II	3 hrs.	200
Total			1000
Marks of Viva-voce			125

(B) MECHANICAL ENGINEERING

<u>Sr. No.</u>	<u>Subject</u>	<u>Duration</u>	<u>Marks</u>
<u>Section-I: Objective Papers</u>			
1.	General Ability test (Part A: General English) (Part B: General Studies)	2 hrs.	200
2.	Mechanical Engineering Paper-I	2 hrs.	200
3.	Mechanical Engineering Paper-II	2 hrs.	200
<u>Section –II Conventional Papers</u>			
4.	Mechanical Engineering Paper-I	3 hrs.	200
5.	Mechanical Engineering Paper-II	3 hrs.	200
Total			1000
Marks of Viva-voce			125

9. Standard and Syllabus of Paper : The standard of paper in General Ability Test will be such as is expected of an Engineering/Science Graduate. The standard of paper in other subjects will be that of an Engineering Degree examination of an Indian University. There will be no practical examination in any of the subject.

10. General Ability Test : (For Civil & Mechanical)

Part A- General English: The question paper in General English will be designed to test the candidates understanding of English.

Part B – General Studies : The paper in General Studies will include knowledge of current events and of such matters as of everyday observation and experience in their scientific aspects as may expected of an educated person. The paper will also include questions on History of India and Geography of the nature which candidate should be able to answer without special study.

SYLLABUS OF THE EXAMINATION

Civil Engineering

(For both Objective and Conventional Type Paper)

Paper-1

- (i) Building Materials and Construction- Stones, Timber, Bricks, Cement, Mortar, Concrete, Masonry, Steel.
- (ii) Solid Mechanics- Stresses, Strains, Failures, Theories of Solid Material, Simple Bending and Torsion Theories, Shear Centre.
- (iii) Graphic Static- Force Polygon, Stress diagram.
- (iv) Structural Analysis - Analysis of trusses and frames, Introduction to plastic Analysis.
- (v) Design of Metal Structure - Working stress and ultimate strength design of simple structures.
- (vi) Design of Concrete and Masonry Structures- Design of masonry walls, working stress design of plain, reinforced and prestressed concrete, ultimate strength design of reinforced and prestressed concrete.

Paper-II

- (i) Fluid Mechanics, Water Resources Engineering –Open channel and pipe flow. Hydrology Design of canals and hydraulics structures.
- (ii) Soil Mechanics and Foundation Engineering and their general principles. Strength parameters, Earth pressures Theories, Design of Shallow and Deep foundations.
- (iii) Transportation Engineering including Railway Engineering and Surveying, Roads Super-elevation, Ruling gradient pavements, Traffic controls, Design Considerations.
- (iv) Environmental Engineering – Water purifications, Sewerage treatment and disposal.
- (v) Construction Planning and Management – Elements of construction practice. Bar charts, CPM, PERT.

Mechanical Engineering

(For both Objective and Conventional Type Paper)

Paper-I

- (i) Thermodynamics: Laws, Properties of ideal gases and vapours, Power Cycles, Gas Power Cycles, Gas Turbine Cycles, Fuels and Combustion.
- (ii) IC Engines: CI and SI engines Detonation, Fuel injection and car-buration. Performance and Testing. Turbojet and Turbo-prop Engines, Rocket Engines, Elementary Knowledge of Nuclear Power Plants and Nuclear Fuels.
- (iii) Steam Boiler, Engines, Nozzles and Steam Turbines Modern boilers, Steam Turbines types Flow of Steam through nozzles. Velocity diagrams for impulse and Reaction Turbines. Efficiencies and Governing.
- (iv) Compressors, Gas Dynamics and Gas Turbines Reciprocating Centrifugal and axial flow compressor. Velocity diagrams, Efficiency and Performance, Effect of Mechanical number on flow, isentropic flow. Normal Shocks and Flow through nozzles Gas Turbine Cycle with multistage compression. Reheating and Regeneration.
- (v) Heat Transfer, Refrigeration and Air-conditioning, Conduction, Convection and Radiation, Heat exchangers, types, combined Heat Transfer, Overall Heat Transfer coefficient, Refrigeration and heat pump cycles. Refrigeration systems. Coefficient of performance. Psychometrics and psychometric chart, Comfort indices, Cooling and dehumidification methods. Industrial-Air-conditioning Process. Cooling and heating loads calculations.
- (vi) Properties and classification of fluid. Fluid statics, kinematics and dynamics; principles and applications. Manometry and Buoyancy. Flow of ideal fluids. Laminar and turbulent flows, Boundary layer theory. Flow over immersed bodies. Flow through pipes and open channels.

Dimensional analysis and similitude technique. Non-dimensional specific speed and classification of fluid mechanics in general. Energy transfer relation performance and operation of pumps and of impulse and reaction water turbines. Hydronamic power transmission.

Paper-II

- (i) Theory of Machines: Velocity and acceleration (i) of moving bodies (ii) in machines. Klien's construction, Inertia forces in machines. Cams, Gears and Gearing. Fly wheels and Governors, Balancing of Rotating and Re-ciprocating masses. Free and forced vibrations of systems. Critical speeds and whirling of shafts.
- (ii) Machine Design: Design of Joints- Treaded fasteners and Power Screws-Keys, Kotters Coupling- Welded Joints. Transmission system-Belt and chain drives-wireropes-shafts. Gears-*Siding and Rolling bearings.
- (iii) Strength of Materials : Stress and strain in two dimensions; Mohr's circles: relations between Elastic Constants.
Beams-Bending moments, shearing forces and reflection.

Shafts-combined bending, direct and torsional stresses.

Thick Walled cylinder and spheres under Pressure, Springs Struts and columns, Theories of failure.
- (iv) Engineering Materials; Alloys and Alloying Materials, heat treatment; Composition, properties and uses, Plastics and other newer engineering materials.
- (v) Production Engineering: Metal Machinery: Cutting Tools: Tool Materials, Wear and Machinability, measurement of cutting forces.
Process: Machining Grinding, Boring, Geer, Manufacturing, Metal forming, Metal Casting and jointing, Basic, Special Purpose, Programme and numerically controlled machine tools, Jigs and fixtures (locating elements).
- (vi) Industrial Engineering: Work study and work measurement Wage incentive, Design of Production System and Product Cost, Principles of Plant layout. Production Planning and Control Material handling, Operations Research, Linear Programming queuing Theory, Value Engineering, Network Analysis CPM and PERT. Use of computers

- 11. Re-evaluation of answer scripts is not allowed.** Only rechecking of scripts of section II- conventional papers on a written request from a candidate, can be allowed on payment of fee of Rs. 100/- (in the shape of Indian postal Orders) per script within thirty days from the date of dispatch of marks.

Answer script of section-I (objective papers 1, 2, & 3) will be scanned by the computer and hence there will be no rechecking of these answer scripts.

- 12. Correspondence with the Commission :-** All communication in respect of the application should be addressed to the **Secretary, Haryana Public Service Commission, Bays No. 1-10, Block-B, Sector-4, Panchkula** and should contain the following particulars:-

Name of examination: **Assistant Engineers (Civil) and (Mechanical) Class-II Exam – 2015**

Month and year of examination.

Roll No. / Registration No. (if the Roll No. communicated to the candidate)

Name of the candidate:

Father's Name:

Address as given in application:

Communications not giving these particulars may not be attended to. In all correspondence with the Commission, concerning this examination, the candidate should invariably superscribe the envelope and correspondence with the words "**Assistant Engineer (Civil) and (Mechanical) Class-II Exam – 2015**".

Date: 10.11.2015

**Secretary
Haryana Public Service Commission
Panchkula**