



**Subject:** Filling up of the posts of Assistant Engineers (Mechanical) in Public Works (R&B) Department  
**Reference:** Public Works (R&B) Department's Letter No. PWD-Adm/122/2021-(Comp. No. 118431) dated 06.04.2022

**Notification No. : 17- PSC (DR-P) OF 2022**  
**Dated: 02- 08-2022**

Applications, through online mode, are invited from the domiciles of the Union Territory of Jammu & Kashmir, possessing the Academic/Professional qualification and prescribed age, for the posts details of which are given in the following paras, in terms of the Jammu and Kashmir Engineering (Gazetted) Service Recruitment Rules, 1978 notified vide SRO 297 of 2006 dated 14-09-2006 and "Jammu & Kashmir Probationer (Conduct of Service, Pay & Allowance) and Fixation of Tenure Rules, 2020" notified vide S.O. 192 of 2020 dated: 17.06.2020 and the Jammu and Kashmir Public Service Commission (Business and Procedure) Rules, 2021.

**MOST IMPORTANT**

- Candidates are advised to update their One Time Registration before filling the application Form
- The Application Form together with instructions for filling up the Application Forms, will be available at the website of the Commission from **03.08.2022**
- Candidates are advised to go through the instructions and ensure that they meet all the eligibility conditions prescribed for the post before filling the online Application Form.
- Last date for filing of online Application complete in all respects along with the requisite fee (online mode only) is **02.09.2022**
- The last date for receipt of online applications provided in the notification shall be the cut-off date for determining the eligibility as regards acquisition of domicile certificates, educational or professional qualifications.
- The minimum and maximum age will however be reckoned with reference to **1<sup>st</sup> January, 2022**.
- Candidates can edit some of the fields in their online application form from **03.09.2022 to 05.09.2022** (upto 11:59 P.M) Instructions in this regard will be separately made available on the website.
- Candidates are required to upload all the mandatory prescribed/requisite documents alongwith the online application form.
- In case the mandatory prescribed/requisite documents are not uploaded with the online applications form, the application form/candidature of the applicant is liable to be rejected without any further notice.
- Candidates are not required to submit hard copy of the online application form or any other documents to the Commission at the time of filling up of online application form.
- The candidates will however, be required to present/produce a down loaded copy of the online form alongwith original certificates at the time of documentary verification.
- Candidates are advised in their own interest to submit online applications much before the closing date and not to wait till the last date to avoid the possibility of disconnection/inability to pay fee or failure to login to the online application portal on account of heavy load on the website during the closing days.

**2. Details of post with category wise breakup is given below**

| Name of the Post with pay scale                        | OM | RBA | SC | ST | EWS | LAC/IB | Social Cast | PSP | Total |
|--|----|-----|----|----|-----|--------|-------------|-----|-------|
| Assistant Engineer (Mechanical)<br>L-8A (50700-160600) | 32 | 06  | 05 | 06 | 06  | 02     | 02          | 02  | 61    |

**3. Prescribed Qualification**

| Designation                     | Qualification   |
|---------------------------------|---|
| Assistant Engineer (Mechanical) | Bachelor's Degree in the relevant branch of Engineering or AMIE Section (A&B) India in the appropriate branch of Engineering. |

**4. Age as on 1st January 2022**

The requirement of age for candidates belonging to Open Merit (OM) & various Reserved Categories is as follows:-

| S.NO | Category                                   | Age limit | Not born after | Not born before |
|------|--|-----------|----------------|-----------------|
| 1    | OM   | 40        | 01.01.2004     | 01.01.1982      |
| 2    | RBA, SC, ST, EWS, LAC/IB, Social Cast, PSP | 43        | 01.01.2004     | 01.01.1979      |
| 3    | In service candidate                       | 40        | 01.01.2004     | 01.01.1982      |
| 4    | PHC  | 42        | 01.01.2004     | 01.01.1980      |

Note: "One Time" age relaxation" shall be granted to the over-aged candidates who had earlier applied for these posts and were within the age limit, as per the advertisement Notification issued at the time but have in the meantime crossed the upper age limit, if he/she applies for the said post(s) in pursuance to fresh notification and also need not to pay any fee afresh.

**5. Horizontal Reservation**

As per 4% Horizontal Reservation two vacancies (i.e. one vacancy for PHC candidate having Locomotor disability and one vacancy for PHC candidate having Low vision) are reserved, as per G.O.No.147-SW of 2014 dated 17.06.2014 of Social Welfare Department

**6. Reservation**

- A candidate seeking his/her consideration under Reserved Categories must ensure that he/she possesses a valid requisite Category certificate and on the cut-off date.
- The candidature will be provisional till the genuineness of the reserved category certificate is verified by the Appointing Authority.
- Candidates may note that in case a claim for reservation is made on the basis of false/fake/fraudulent certificate, he/she shall be debarred from the examination(s) conducted by the J&K Public Service Commission, in addition to any other penal action as may be deemed appropriate.

**7. Domicile**

The candidate should be a Domicile of the Union Territory of Jammu & Kashmir. The candidate must possess the Domicile Certificate issued by the Competent Authority in the prescribed format by or before the last date prescribed for submission of online application form.

**8. Centre of Examination**

- The examination will be held at Srinagar & Jammu centres. All the candidates shall choose anyone of the two places.
- The allotment of centres shall be at sole discretion of the Commission and once a centre is allotted to a candidate, request for a change of centre will not be entertained.
- Information about the Examination indicating the time table and Centre of Examination for the candidates will be uploaded on the website of the Commission about two weeks before the date of examination. If any candidate does not find his/her Roll Number on the website of the Commission, one week before the date of examination, he/she must immediately contact the Commission's Office at Srinagar/Jammu, with proof of having submitted his/her application. Failure to do so will deprive him/her of any claim for consideration.
- Candidate must submit his/her online application form, Email ID and Mobile Number along with his/her Name, Date of Birth and Name of the Examination, while addressing any communication to the Commission. Communication from the candidates not furnishing these particulars shall not be entertained.
- Admit Cards will be available for downloading about two weeks before the date of examination on the official website of the Commission i.e. jkpsc.nic.in. Candidate must bring printout of the Admit Card/Roll Number Slip to the Examination Hall.
- For securing entry into the centre of examination, in addition to the Admit Card/roll Number Slip, it is mandatory to carry at least two passport size recent color photographs (not taken earlier than 01.01.2022) and any of the original valid Photo-Id proof such as:
  - Aadhar Card/ E-Aadhar,
  - Voter's ID Card,
  - Driving License,
  - PAN Card,
  - Passport,
  - School /College/University I- Card
  - Employer ID Card.

**9. Scheme of Selection / Examination**

The pattern of Examination shall comprise the following:

|   |  |           |                   |
|---|--|-----------|-------------------|
| A | Written Examination  | 68 points |                   |
| B | Performance in the interview/Viva Voce test. The candidate shall be asked to deliver a 5 minute demonstration/lecture on a given topic from the relevant subject to demonstrate his/her domain knowledge/skills and will be assessed and evaluated by the subject experts and the Members of the Commission in the Selection Committee/interview Board | 25 points |                   |
| C | <b>Weightage for Higher Qualification</b>  |           |                   |
|   | (i) One year Post Graduate Diploma in the relevant subject (on pro rata basis)   | 02 points | Maximum 04 points |
|   | (ii) Masters'/Post Graduate Degree in the relevant subject (on pro rata basis)   | 04 points |                   |
| D | <b>SPECIAL ATTRIBUTES</b>  |           |                   |
|   | Distinction in Sports (Certified by Secretary, J&K Sports Council to be an outstanding Sports Person in terms of J&K Appointment of (Outstanding Sports Persons) Rules, 2022   | 01 point  |                   |
|   | Distinction in NCC activities (Holder of Grade "C" Certificate)  | 01 point  |                   |
|   | Gold Medal for overall first position in the prescribed qualification.   | 01 point  |                   |

**Type/Pattern of written examination.**

- The written examination will be an objective type Multiple Choice Question (MCQ) paper of two hours duration and having minimum 100 questions.
- There will be negative marking for incorrect answers (as detailed below) for all questions:
  - 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 (.25) of the marks assigned to that question will be deducted as penalty.
  - If a candidate gives more than one answers, it will be treated as a wrong answer even if one of the given answer happens to be correct and there will be same penalty as given herein above for that question.
  - If a question is left blank i.e. no answer is given by the candidate, there will be no penalty for that question.

**Interview/ Viva Voce**

On the basis of the marks obtained by the candidates in the written examination, an interview/viva voce test will be conducted. The number of candidates called for interview/ viva voce test shall be restricted, as far as practicable, to a minimum of three times the number of vacancies in order of merit. The interview/ viva-voce will have 25 points.

**Syllabus**

**MECHANICAL ENGINEERING  
PAPER-I**

- Mechanics:**
  - 1.1 Mechanics of Rigid Bodies:** Equations of equilibrium in space and its application; first and second moments of area; simple problems on friction; kinematics of particles for plane motion; elementary particle dynamics.
  - 1.2 Mechanics of Deformable Bodies:** Generalized Hooke's law and its application; design problems on axial stress, shear stress and bearing stress; material properties for dynamic loading: bending shear and stresses in beams; determination of principle stresses and strains-analytical and graphical; compound and combined stresses; bi-axial stresses-thin walled pressure vessel; material behaviour and design factors for dynamic load; design of circular shafts for bending and torsional load only; deflection of beam for statically determinate problems; theories of failure.
- Engineering Materials:** Basic concepts on structure of solids, common ferrous and non-ferrous materials and their applications; heat-treatment of steels; non-metals/plastics, ceramics, composite materials and nano-materials.
- Theory of Machines:** Kinematic and dynamic analysis of plane mechanisms. Cams, Gears and epicyclic gear trains, flywheels, governors, balancing of rigid rotors, balancing of single and multi-cylinder engines, linear vibration analysis of mechanical systems (single degree of freedom). Critical speeds and whirling of shafts.
- Manufacturing Science:**
  - 4.1 Manufacturing Process:** Machine tool engineering - Merchant's force analysis: Taylor's tool life equation; conventional machining: NC and CNC machining process; jigs and fixtures. Non-conventional machining-EDM, ECM, ultrasonic, water jet machining etc.; application of lasers and plasmas; energy rate calculations. Forming and welding processes-standard processes. Metrology-concept of fits and tolerances; tools and gauges; comparators; inspection of length; position; profile and surface finish.
  - 4.2 Manufacturing Management:** System design: factory location—simple OR models; plant layout-methods based; applications of engineering economic analysis and break-even analysis for product selection, process selection and capacity planning; predetermined time standards. System planning; forecasting methods based on regression and decomposition, design and balancing of multi model and stochastic assembly lines; inventory management-probabilistic inventory models for order time and order quantity determination; JIT systems; strategic sourcing; managing inter plant logistics. System operations and control: Scheduling algorithms for job shops; applications of statistical methods for product and process quality control applications of control charts for mean, range, percent defective, number of defectives and defects per unit; quality cost systems; management of resources, organizations and risks in projects. System improvement: Implementation of systems, such as total quality management, developing and managing flexible, lean and agile Organizations.

**PAPER-II**

- Thermodynamics, Gas Dynamics Turbine**
  - 1.1** Basic concept of First-law and Second law of Thermodynamics; concept of entropy and reversibility; availability and unavailability and irreversibility.
  - 1.2** Classification and properties of fluids; incompressible and compressible fluids flows; effect of Mach number and compressibility; continuity momentum and energy equations; normal and oblique shocks; one dimensional isentropic flow; flow of fluids in duct with frictions that transfer.
  - 1.3** Flow through fans, blowers and compressors; axial and centrifugal flow configuration; design of fans and compressors; single problems compresses and turbine cascade; open and closed cycle gas turbines; work done in the gas turbine; reheat and regenerators.
- Heat Transfer:**
  - 2.1** Conduction heat transfer—general conduction equation-Laplace, Poisson and Fourier equations; Fourier law of conduction; one dimensional steady state heat conduction applied to simple wall, solid and hollow cylinder and spheres.
  - 2.2** Convection heat transfer—Newton's law of convection; free and forced convection; heat transfer during laminar and turbulent flow of an incompressible fluid over a flat plate; concepts of Nusselt number, hydrodynamic and thermal boundary layer their thickness; Prandtl number; analogy between heat and momentum transfer—Reynolds, Colburn, Prandtl analogies; heat transfer during laminar and turbulent flow through horizontal tubes; free convection from horizontal and vertical plates.
  - 2.3** Black body radiation—basic radiation laws such as Stefan-boltzman, Planck distribution, Wein's displacement etc.
  - 2.4** Basic heat exchanger analysis; classification of heat exchangers.
- Engines :**
  - 3.1** Classification, thermodynamic cycles of operation; determination of break power, indicated power, mechanical efficiency, heat balance sheet, interpretation of performance characteristics, petrol, gas and diesel engines.
  - 3.2** Combustion in SI and CI engines, normal and abnormal combustion; effect of working parameters on knocking; reduction of knocking: Forms of combustion chamber for SI and CI engines; rating of fuels; additives; emission.
  - 3.3** Different systems of IC engines-fuels; lubricating; cooling and transmission systems. Alternate fuels in IC engines.
- Steam Engineering :**
  - 4.1** Steam generation—modified Ranking cycle analysis; Modern steam boilers; steam at critical and supercritical pressures; draught equipment; natural and artificial draught; boiler fuels solid, liquid and gaseous fuels. Steam turbines— Principle; types; compounding; impulse and reaction turbines; axial thrust.
  - 4.2** Steam nozzles—flow of steam in convergent and divergent nozzle pressure at throat for maximum discharge with different initial steam conditions such as wet, saturated and superheated, effect of variation of back pressure; supersaturated flow of steam in nozzles, Wilson line.
  - 4.3** Rankine cycle with internal and external irreversibility; reheat factor; reheating and regeneration, methods of governing; back pressure and pass out turbines. 4.4 Steam power plants—combined cycle power generation; heat recovery steam generators (HRSG) fired and unfired, co-generation plants.
- Refrigeration and Air-conditioning :**
  - 5.1** Vapour compression refrigeration cycle—cycle on p-H & T-s diagrams; ecofriendly refrigerants—R 134a, 123; Systems like evaporators, condensers, compressor, expansion devices. Simple vapour absorption systems.
  - 5.2** Psychrometric—properties; processes; charts; sensible heating and cooling; humidification and dehumidification effective temperature; air-conditioning load calculation; simple duct design.

**10. Requisite Fee**

After successful submission of the online application form, candidate will be required to deposit requisite fee through online mode. The amount of fee to be paid is given below:

|                     |            |
|---------------------|------------|
| OM Category         | Rs.1000.00 |
| Reserved Categories | Rs.500.00  |
| PHC                 | Nil        |

Note:

- The application Form submitted without deposition of the fee, which gets substantiated through reflection of the same on the application form, such application form shall be treated as incomplete and candidature shall be deemed to have been rejected without any notice. No representation against such rejection shall be entertained.
- Submission of multiple applications by way of prefixing Mr./Ms or through generation of multiple User ID's or any other mode, followed by either non-payment of fee particulars or fee particulars (TID) of one application (RID) being mentioned against another application with a different RID would lead to rejection of the online application. The applicants who are submitting multiple applications should note that only the applications with higher Registration ID (RID) number shall be entertained by the Commission and fee paid against one RID shall not be adjusted against any other RID number. Besides a strict disciplinary action shall be taken including the cancellation of candidature and debarment for future examinations of J&K PSC will be taken against such applicants.

**11. Documents to be uploaded**

While filling the online application form the applicants are requested to upload the documents as per details given below:-

**Documents (Mandatory):-**

- Date of birth certificate (secondary School/Matric Certificate)
- Domicile Certificate of the UT of J&K.
- Bachelor Degree alongwith consolidated Marks Card (s) upto 05 lvs.

**Documents (Mandatory if claiming benefit under that category):-**

- Category Certificate. 01 leaf
- In-service certificate signed by HOD

**Any other document for which the candidate is claiming weight age as per J&K (Business and Procedure) Rules, 2021:-**

- Master's Degree
- "C" Certificate in NCC activities. 01 leaf
- Certificate of Distinction in Sports in terms of J&K Appointment of (Outstanding Sports Persons) Rules, 2022
- Gold Medal Certificate for overall first position in the prescribed qualification. 01 leaf

**It may be noted that no further opportunity to upload any document shall be provided hereafter and action under rules including rejection of application/candidature will be taken. While uploading the documents, the following guidelines, wherever applicable, shall also be kept in view before claiming weightage on such parameters:-**

- The weightage available for the Gold Medal(s) shall be for securing the overall first position in the minimum prescribed qualification. In case the convocation for award of Gold Medal has not been convened, a certificate from the competent authority shall be uploaded to the effect that he/she is entitled to Gold Medal for security overall 1<sup>st</sup> position in the prescribed qualification and shall be awarded the same in the convocation of the University/Institute.
- Foreign Degree shall only be entertain if equivalence Certificate issued by Association of Indian Universities (AIU) is made available.

**12. Provision of Compensatory Time and Assistance of Scribe**

On request of a visually impaired (Blind) or any other candidate who is handicapped to the extent that he/she is not able to write, the candidate shall be provided assistance of an amanuensis (Scribe) on production of a Disability Certificate issued by the Medical Board constituted by the Government consisting of CMO of the District and at least two Medical Specialists nominated by the concerned Director, Health Services (with at least one specialist from the field concerned department). After verifying the genuineness of the certificate/satisfying itself, the Commission may provide services of Scribe to the candidate on the day of

examination. The scribe should have one qualification down than the requirement for the post applied for by the candidate(s) and further should be from an academic stream different from that stipulated for the post. The scribe shall be paid remuneration charges equivalent to the Invigilator.

Provided the concerned Supervisor shall ensure that the scribe provided to the candidate shall not extend any type of help to the candidate in solving the questions. Blind candidates will be allowed an extra time of 20 minutes per hour.

**13. Important instructions regarding filling up of online applications are given herein below:**

- Candidates are required to apply online through the website of the Commission i.e. <http://www.jkpsc.nic.in>. No other means/ mode of application shall be accepted.
- Candidates are first required to go to the JKPS website [www.jkpsc.nic.in](http://www.jkpsc.nic.in) and click on the link "One Time Registration" or click on Login menu if you have already created your profile with the JK PSC.
- After logging into your account, candidates are required to fill all the requisite fields of One Time Registration (OTR) i.e. personal information, contact information & educational qualification, service details etc.
- The candidate shall also be required to upload the image of date stamped recent passport size color photograph and signature. The photograph should not be taken earlier than **01.01.2022**.
- Size of the photograph (passport size) and signature must be between 10kB to 20kB in \*.jpeg or \*.jpg only.
- After successful submission of all the details in your OTR account, check the eligibility conditions as mentioned in the advertisement notification before applying for the post.
- On Clicking on the "show examination" a window will appear on your computer screen. Select the month of the advertisement notification for which you want to apply, a link(s) for the post(s) will appear on the computer screen.
- An "APPLY" button is shown against the respective post and the candidates will click on the APPLY button against the post he/she is eligible.
- On clicking "APPLY" button, an instruction window will appear. Candidates should read instructions carefully before clicking on "APPLY" button at the bottom of the webpage.
- On clicking "APPLY" button, the system will display all facts/particulars that a candidate may have mentioned while filling up the necessary fields of his/her OTR account. Candidate shall fill up the remaining required fields in the application form and accept the declaration thereof.
- Once the candidate is satisfied *about the correctness* of the filled in details, then, he or she may click on "SUBMIT" button to finally push the data into server with successful submission report.
- On successful submission of the basic details, the candidates will be required to pay the online fee and uploading of the documents, for final submission of the online application form.
- Candidates can pay the requisite fee through online mode in the "SUBMITTED APPLICATIONS" menu in your account.
- After successful payment of the fee, the fee status will get reflected on the Online Application form. Candidates can check the fee status by clicking on the **Print Application Button** in the submitted Applications menu in your JKPS account. In case the payment status shows either "not submitted or under processing or status has not been reflected on your submitted application form", candidates(s) are advised to contact the JKPS office at Solina Srinagar/ReshamGhar Colony Jammu immediately for clarification. Further where the online fee is paid through other service providers the candidate must ensure that not only the amount of fee is debited from his/service provider's Account but also credited into the official account of JKPS.
- After successful submission of fee, the candidates will be required to upload requisite documents as specified in the advertisement/application form.
- The candidate would be able get the printout of his/her submitted application only after the payment of the requisite fee and uploading of requisite documents.
- Please note that the above procedure is the only valid procedure for applying. No other mode of application or incomplete steps would be accepted and such applications would be rejected.

**14. Editing of the online application form**

Candidates who have successfully submitted the online application form along with requisite fee will be allowed to edit some of the fields in their submitted online application form within three days after the cut-off date i.e. on **03.09.2022 to 05.09.2022**. Detailed instruction in this regard will be made available on the website.

**15. Action against candidates found guilty of misconduct**

Candidates are advised that they should not furnish any particulars that are false or suppress any material information.

**A candidate who is, or has been, declared by the Commission, to be guilty of:**

- obtaining by wrongful support of his/her candidature by any means, or
- impersonating, or
- procuring impersonation by any person, or
- submitting fabricated documents or documents which have been tampered with or
- making statements which are incorrect, or false or suppressing material information, or
- resorting to any other irregular or improper means in connection with his/her candidature for the selection, or
- using unfair means during the interview, or
- misbehaving in any other manner in the interview, or
- harassing or doing bodily harm to the staff employed by the Commission for the conduct of their test, or
- attempting to commit or , as the case may be, abetting the Commission of all or any of the acts specified in the foregoing clauses may, in addition to rendering himself/herself liable to criminal prosecution.

**Shall be liable:**

- to be disqualified by the Commission from selection for which he/she is a candidate, and/or
- to be debarred either permanently or for a specified period:-
  - By the Commission from any examination or selection held by them.
  - By the Union Territory Government from any employment under them, and

(c) if he/she is already in service under Government, disciplinary action can be taken against his/her under the appropriate rules.

PSC/DR/AE/Mechanical/2022

Dated: 02:08.2022

DIP/J-6293/22 Dt. 03-08-22

(Bashir Ahmad Dar) JKAS

Secretary

J&K Public Service Commission