

EAST COAST RAILWAY

Office of the
Principal Chief Personnel Officer
Bhubaneswar.
Date: 28.07.2021

No.ECoR/Pers/Gaz/Engg./AEN-30%/LDCE/21-22

The PCE, CAO(C), CPD/RE, GM/RVNL/BBS.

The Dy.CE/Con-BBS, SBP, ANGL, JJKR, CTC & VSKP.

The Dy.CSO (Engg.)/BBS, Dy. CVO (Engg.)/BBS, WPO/ CRW /MCS.

The Sr. DPO- KUR, WAT & SBP.

The Sr.DEN(Co-Ord.)-KUR, WAT & SBP.

The SPO(Con)/BBS & SPO/Con/VSKP, SPO(RE)/BBS.

The GM (P) & PCE-SER/GRC & SECR/BSP.

All Concerned.

Sub: Formation of Group-B/Engg. Panel of AEN against 30% LDCE quota vacancies for the assessment period from 01.01.2021 to 31.12.2022 (2021-22) in Civil Engineering Department of East Coast Railway.

It has been decided by the competent authority to hold written test for formation of a Group-B **Engg. Panel of 05 (UR) posts of AEN against 30% LDCE** quota vacancy in Civil Engineering Department of East Coast Railway for the assessment period 2021-22. The exact date, time and venue of the written test will be intimated in due course.

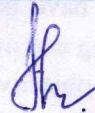
1. Eligibility Conditions:

In terms of Para (ii) of Railway Board's letter No. E(GP)2019/2/25 dated 27.12.2019 (RBE No. 216/2019), Group-C technical employees of Civil Engineering Department of ECoR working in Level-6 and above in Pay Matrix with 5 years of non-fortuitous service in Level-6 and above in Pay Matrix (including non-fortuitous service rendered in the corresponding pre-revised grade pay) as on 01.01.2021 (cut-off date) are eligible for the post of AEN/Gr-B against 30% LDCE quota vacancies for the assessment period of 2021-22. The post of AEN (Gr. B) is a safety category post.

NOTE

- (i) In terms of Rly. Board letter No. E(NG)1-93/PMI/4 dtd. 18.01.93, time spent by the Rly. Servant under training immediately before appointment to regular service will be counted as service for the purpose of LDCE.
- (ii) Staff whose lien is maintained in the revised jurisdiction of ECoR are only eligible. Besides, the Staff whose lien is maintained in ECoR but working outside the jurisdiction of ECoR will also be eligible. In such case they have to submit their applications through the Personnel Officers of the Divisions/Units where their lien is maintained and this should be certified by the concerned Personnel Officers only.

2. Employees eligible as per the above eligibility conditions should submit their applications to appear the above LDCE **latest by 27.08.2021** in the attached format (Annexure-A) to the concerned Controlling Officers/Personnel Officers. The concerned controlling Officers should send such options received immediately to the respective Personnel officers who should scrutinize the candidature of the employees as per the above eligibility conditions/verifying the respective Service Sheets and send the names of the eligible staff only in consolidated statements as per proforma attached so as to reach this office on or before **07.09.2021** positively. The concerned Personnel Officers should ensure that all the columns of the enclosed proforma are properly filled-in before sending the statements to this office. **A soft copy of the said statement must be sent invariably to this office along with the hard copy for scrutiny.**

 Page-1/3

3. In case, any candidate is on leave or on deputation to other Railways/Units/office or on sick list, the Controlling officer concerned and the offices where he/she last worked should send necessary advice to the authority under whom he/she is working or the Medical Authority as the case may be without fail and acknowledgements obtained.

4. The concerned Personnel Officers & the Sr. DENs are advised to give wide publicity to this Notification at all major Units under their jurisdiction. The Divisions are advised to submit an undertaking that the Notification has been served at all major Units where eligible staff are available and their acknowledgement should be obtained. This should be jointly certified by Sr. DPOs & Sr. DENs. It should be noted that on obtaining such certificates from the Divisions, list of eligible candidates and date of examination shall be published.

5. Options of the staff concerned need not be sent to this office directly. Controlling officers/Personnel officers should ensure that options received by their offices after **27.08.2021** are not considered under any circumstances. Names of those staff who have not fulfilled the eligibility criteria as mentioned above need not be forwarded. It may also be noted that incomplete statements furnished by the divisions/units will not be entertained.

6. As there is no reserved vacancy in this notification, Pre-Selection training is not mandatory as per RBE No. 142/2019.

7. **Objective and Scheme of Examination:** The examination aims at a comprehensive assessment of knowledge of the candidates related to their Technical subject, Official language policy, Establishment and Financial Rules. *The formation of the panel will be on the basis of 'Merit'*. Selection of candidates for empanelment is based on (i) Written Examination, (ii) viva-voce (with prior Medical Fitness test) and assessment of records by the Selection Committee vide Para-204.1 of IREM Vol.1. The following procedure as outlined in RBE No. 53/2019 and in para- 10 & 11 of Master Circular No.68 will be followed in the written test, viva-voce and evaluation of record of service.

8. **Written Examination:** In order to bring objectivity to the selection process, it has been decided by Railway Board vide RBE No. 53/2019 that there shall be a Pre-qualifying single paper examination of 100 marks which shall have 100% Objective type Multiple Choice Questions only. The distribution of marks will be as under:-

- | | | |
|----|--|------------|
| a) | Technical Subject | : 40 marks |
| b) | General Knowledge including optional Questions on Official language Policy | : 30 marks |
| c) | Establishment and Financial Rules | : 30 marks |

d) **Qualifying Marks:** The candidates scoring 75% and above in the Pre- qualifying examination shall be eligible for appearing in the main examination and for this, number of candidates should be restricted to 5 times the number of respective vacancies in order of merit.

9. **Main examination:** The Pre-qualifying examination will be followed by one descriptive type paper on professional subject comprising of 100 marks and the qualifying marks in the written examination will be 60% and above.

10. **Syllabus for 30% LDCE:** The syllabus prescribed by the Railway Board for written examination for promotion from Group-‘C’ to Group-‘B’ post in Civil Engineering Department which was published by Railway Board vide letter No. E(GP)2008/2/6 dated 25.11.2016 (RBE No.140/2016) constitute topics on Paper-I & Paper-II. In terms of RBE No. 53/2019, the topics on professional subjects of Paper-I and Paper-II have been amalgamated and the topics picked up by the Competent Authority for the Pre-qualifying and main examination are enclosed.

11. All objective type questions will carry equal marks. Every question should have four options numbered as A,B,C,D (only Capital letters) and answers to such questions by the candidates are to be marked on OMR answer sheets and the OMR answer sheets will be evaluated manually.

12. There will be 110 questions of objective multiple choice type with four answer options and the candidate has to answer a maximum of 100 questions. In case, any candidate answers more than 100 questions, first 100 attempted questions only are to be taken for evaluation.
13. The questions on official language policy will be of 10 marks i.e, 10% of maximum 100 marks, but these questions will not be compulsory.
14. There shall be negative marking for incorrect answers. One-third of the marks allotted for each question will be deducted for every wrong answer as per RBE No.53/2019.
15. Candidates should get it noted that to ensure the authenticity of the answers to Multiple Choice Questions, no corrections of any type (viz. cutting, overwriting, scoring off a ticked answer & ticking another answer, erasing, modifying the answer in any way) will be permitted. Zero marks will be awarded in such cases of corrections in terms of RBE No. 53/2019.
16. The duration of the written examination will be of **02 hrs (120 Minutes) for the Pre-qualifying and Main Examination.**
17. **Viva-voce** (Only medically fit candidates will be allowed to appear the Viva-voce test):

	Maximum marks	Qualifying marks
1. Viva-voce	25	30 (Including at least 15 marks in record of
2. Record of service	25	Service)

18. As per rule, no supplementary examination is permissible in LDCE for the absentees under any circumstances. The Controlling Officers/Sr.DPO/WPO/SPO of concerned Unit/Division should ensure that the ACRs/APARs of the candidates for the last five years, completed in all respects, SRs & Personal files are kept ready with them and they should send the same to Dy. CPO(Gaz)/SPO(Gaz)/BBS, when called for.
19. In terms of Railway Board's letter No. E(GP)80/2/8 dtd. 31.10.91 only those candidates who qualify in the medical examination of prescribed standard are eligible to appear in the viva-voce test.
20. In connection to above, complaints/suggestions if any should be submitted to the undersigned on or before 14.08.2021, so that the same can be put up to the Competent Authority for consideration, otherwise complaints/ suggestions received beyond it, will not be entertained.

Encl: (1) Syllabus. (2) Annexure-A

(H.K. Mahanand)

Senior Personnel Officer-I

For Principal Chief Personnel Officer

Copy to: (1) Sr. System Manager (IT)/BBS for uploading in ECoR's website.

(2) The General Secretary-ECORSC/BBS, ECoRSU/BBS, AISCSTREA/BBS, AIOBCREA/BBS.

(3) Notice Board.

For Principal Chief Personnel Officer

95/13
89

SYLLABUS FOR 30% LDCE FOR PROMOTION TO GROUP 'B' POST OF AEN
IN CIVIL ENGINEERING DEPARTMENT ON ECoR

....

MAIN EXAMINATION (PROFESSIONAL SUBJECT-DESCRIPTIVE)

Full Marks: 100

Qualifying Marks: 60

- 1.1. Level lines—datum, bench marks, method of reducing levels.
- 1.2. Setting out simple circular curves, vertical curves, transition curves.
2. Bending moment and shear force in simply supported beams and cantilevers.
 - 2.1.1. Design of slabs, Design of columns
3. Properties and uses of building materials –stones, sand, timber, bricks, cement, lime, paints, varnishes, glasses, tiles.
 - 3.1. Specification and construction of earth work in embankment and cuttings as per RDSO specifications.
 - 3.2. Different types of foundations, open foundations, well foundations and pile foundations.
 - 3.3. Rainfall and run-off, flood discharge estimation, protection measures for bridges.
 - 3.4. Water born diseases, sources of water, Purification of water.
 - 3.5. Maintenance and cleaning of storage tanks.
 - 3.6. Principles of rain water harvesting, methods, estimation of capacity of rain water harvesting pits/salient.
 - 3.7. **Water Audit and Water Management**—Conservation of water, water reuse, water recycling, water recycling plant, flow measurement system, identification of losses and leakages
4. **Railway Surveys and Construction**—Ruling gradients, Grade Compensation for curves, Horizontal and vertical curves.
5. **Railway Track**—Fastenings, ballast, blanket, LWR/SWR track.
6. **Maintenance of Permanent Way**
 - 6.1. **Duties**—Duties of Assistant Divisional Engineers, SSE(P.Way), JE(P.Way).
 - 6.2. **Maintenance of Permanent Way**—Machine packing, maintenance of points and crossings, maintenance of curves.
 - 6.3. **Special Maintenance Works**—Maintenance in electrified section, maintenance of track circuited sections.
 - 6.4. **Design, Maintenance of curved track and realignment of curves**—Curvature, transitions, super elevation of curves, safe speeds, cant deficiency, speed on curves with turnouts, re-alignment of curves, method, extra clearances on curves.
7. **Maintenance of Bridges**
 - 7.1. **Maintenance of Bridges**—various defects of bed blocks and their remedies, bearings, precautions while carrying out maintenance works on bridges.
 - 7.2. **Inspection of Bridges**— Numerical Rating System (NRS), Overall Rating Number, distressed bridges.

B
9/12/19

- 7.3. Flood records at important bridges, Road Over/Under Bridges, special inspection during monsoon.
- 7.4. Replacing cracked bed blocks.
8. **Inspection and Maintenance of Tunnels and Deep cuttings**
- 8.1. **Deep Cuttings**—Points to be noted during inspection of cuttings, action to be taken in the case of boulder drops, action to be taken after inspection of cutting, guarding of vulnerable cuttings.
9. **Track Management System**—Salient feature of TMS, advantage of TMS.
10. **Maintenance of sanitary and hygienic conditions in station yards and railway colonies, water supply, drainage and sewerage:**
 - 10.1. **Sanitation**—Prevention of infectious diseases.
 - 10.2. **Water Supply**—Source of water supply, rainfall registers,
11. **Acquisition, management and disposal of land**
 - 11.1. Instructions regarding cutting/trimming and sale of natural product like mature tree, dry trees within and outside railway boundary, near electric or telegraph lines, sale of grass right etc.
12. **Rehabilitation of Bridges**—Reasons for rehabilitation, priority for rehabilitation of bridges, precautions when working on bridges, replacement of pipe culverts, replacement of small opening.
13. Works requiring sanction of CRS and opening of new lines, commissioning of Projects for passengers/goods train.
 - 13.1. Temporary Engineering fixed signals, arrangements prior to commencement of work, protection in block section for speed restrictions, permanent speed restriction indicators.
 - 13.2. **Level Crossings: General**— appointment of gatemen, duties of gatemen, examination of gate equipment and gatemen in rules, road traffic census.
 - 13.3. **Working of Trolleys: General Instructions**— distinction between trollies, lorries and motor trollies, trolley refuges.
 - 13.4. Loading and unloading from hopper wagons, precaution for material train including hopper operation.
14. Action in case of derailments.
 - 14.1. Danger level at bridges, Watchmen at important bridges, special inspection during monsoon, action to be taken in the case of weather warning, pitching stone, boulder and monsoon reserve, vigilance during floods, river protection works, types, design, repairs and maintenance records— rivers and floods, Flooded Causeways/Dips, special precautions when track is submerged, rivers and flood register, flood reports, rainfall data, provision of Anemometer on Bridges.
 - 14.2. General precautions to be taken before monsoon, vulnerable sections, materials for anticipated emergencies, monsoon emergency rakes, equipment tools, , temporary bridge spans, protective works, Railway affecting works and tanks, R.A.W. Tablet, joint inspection of RAW/RAT, inspection and vigilance over railway affecting tanks during heavy rain,

9/2/19

- 14.3. Types of patrolling, Keymen's daily patrol, gang patrol during abnormal rain, night patrolling during monsoon, , hot weather patrolling for LWR/CWR, stationary watchman at vulnerable points, protection of line in case of emergency, commencement and termination, preparation of Patrol Charts, distribution of patrol charts, Patrol Books and systematic patrolling.
15. Deposit works, urgency certificate, supplementary estimates, revised estimates.
16. **Contracts and Execution of works**
 - 16.1. Tenders, types, contracts, types, contract documents, General and Special condition of contract, ballast measurement, computation of quantities, preparation of abstract in measurement books, variations, PVC, basics of Arbitration.
 - 16.2. Bar Charts, critical path networks, PERT, Project planning and execution.
 - 16.3. Requisitions for stores, receipt and issue of challans.
 - 16.4. **Law and Order**—Railway Police, lodging complaints, cooperation with Railway Police, cognizable offences, non-cognizable offences, powers of arrest by railway staff, warrant against railway staff, action by railway staff in case of attempted sabotage, prevention of trespass, disposal of human bodies found run over, disposal of cattle found dead on the line.
17. **Track Machines**
 - 17.1. Working of various Track Machines: pre-requisites, pre-block preparatory works and operations during block, post-block attention works.
 - 17.2. Working of tamping machines
 - 17.3. Performance and quality parameters in tamping, squeezing pressure, squeezing time, vibration pressure and tamping depth.
 - 17.4. Maintenance of machines.

9/2/19

SAP-A
(91)

SYLLABUS FOR 30% LDCE FOR PROMOTION TO GROUP 'B' POST OF AEN
IN CIVIL ENGINEERING DEPARTMENT ON ECoR

....

PRE-QUALIFYING EXAMINATION

FYULL MARKS: 100
Qualifying Marks: 75

NB:

- (1) **100% OBJECTIVE TYPE MULTIPLE CHOICE QUESTIONS.**
- (2) All Objective type questions carry equal marks.
- (3) One third of marks allotted for each question will be deducted for every wrong answer.
- (4) Number of candidates is restricted to 5 times the number of respective vacancies in order of merit.
- (5) No correction of any type (viz. cutting, overwriting, scoring off a ticked answer and ticking another answer, erasing, modifying the answer in any way) will be permitted. Zero marks will be awarded in such cases of corrections.

....

(A)	<u>TECHNICAL SUBJECTS:</u>	40 MARKS
-----	-----------------------------------	-----------------

1.
 - (i) Recording the levels in field book, arithmetical check, longitudinal and cross section contouring.
 - (ii) Elements of simple circular curves.
2. **Strength of Materials, Structural Designs and Drawings**
 - (a) **Strength of Materials**—Bending moment and shear force in simply supported beams and cantilevers.
 - (b) **Structural Designs and Drawings**

Steel Structures—Rivets and welds, sketch and detailing of connections, different types of joints and strength determination,
3. **Construction materials**—Description, specification, properties and uses of building materials—stones, sand, cement, tiles.
4. **Foundation and Construction Engineering**
 - (a) **Soil Mechanics**—Different types of soil, compaction, consolidation, shear strength, earth pressure theories, slope stability.
 - (b) **Foundation Engineering**—Different types of foundations.
5. **Hydraulics and Hydrology**
 - (a) **Hydraulic structures**—Alignment, clearance, clearance.

9/7/19

6. **PUBLIC HEALTH ENGINEERING**

(a) **Water Supply**

- (i) Disinfection, hardness-methods of removal.
- (ii) Conservation of water, water reuse, water recycling, water recycling plant,

7. Ruling gradients, Grade compensation for curves, Horizontal and vertical curves, Hill surveys, Catch sidings, tunnels,

8. Points & crossings, geometry and design features and Track layouts.

- (a) **Maintenance of Permanent Way**—Lifting and lowering of track, lubrication of rail joints, adjustment of creep, maintenance of level crossings, track on bridges.
- (b) **Special Maintenance Works**—Maintenance of short welded rails, long welded and Continuous welded rails, maintenance of switch expansion joints.
- (c) Curvature, transitions, super elevation of curves, cant deficiency, extra clearances on curves,
- (d) Maintenance and working of various track machines.

9. **Maintenance of Bridges**

- (a) Dismantling of arches, details of common repair techniques-cement pressure grouting, epoxy grouting, shotcreting/guniting,
- (b) Classification of bridges-major, minor, important, Numerical Rating System (NRS), Unique Rating Number, Condition Rating Number, Overall Rating Number

9.1. Pre-requisites for introducing TMS in Divisions.

10. Vacant Railway Buildings, Building Registers, standard measurement registers for buildings, dismantling of buildings/structures,

10.1. Drinking water wells-protection, cleaning of wells, disinfection,

10.2. Water sample analysis, precaution against pollution.

10.3. Instructions regarding cutting/trimming and sale of natural product like mature tree, dry trees within and outside railway boundary.

11. **Rehabilitation of Bridges**—Special strengthening, imposition of speed restriction, assembly and erection of girders, distress in parapets, replacement of small opening.

2/7/19

24/3
90

12. **Works Affecting Railway Safety and Opening New Works: General**—Infringements to Schedule of Dimensions-conditions and procedure thereof.
- 12.1. Rules for working of trains, block working rules-types, introduction of temporary single line working.
- 12.2. **Engineering restrictions and indicators: General**—Works of long duration, temporary Engineering fixed signals, temporary signals in emergency, review of permanent speed restrictions, indicators-General.
- 12.3. **Level Crossings: General**— Classification, standard specifications, normal position of gates, level crossing equipment, duties of gatemen, examination of gate equipment and gatemen in rules, level crossings register, road traffic census, manning/demanding of level crossings.
- 12.4. **Ballast and material trains: General**—Loading and unloading from hopper wagons, training out materials and daily reports of ballast train working, charges for ballast trains.
13. Intimation of accidents by Station Masters, reporting details of accident
14. **Rivers and Floods, pre-monsoon precautionary measures and patrolling of Railway lines.**
- 14.1. **Rivers and Floods: General**—Danger level at bridges, provision of Anemometer on Bridges.
- 14.2. **Monsoon and emergency patrol**—Duties of patrolmen and their equipment, review of patrolling systems and vulnerable locations, duties of patrolmen, check over patrolling, vulnerable locations (points).
15. **Preparation of Plans and Estimates: Preparation of Plans**—Scale of drawings, details on drawings, completion drawings, track renewal works.
16. **Contracts and Execution of works**
- 16.1. Deposit works, excess and savings on estimates, mile stone, bar charts, critical path networks, PERT, contracted works, issue of work orders, completion documents, zonal works.
17. **Miscellaneous**
- 17.1. Precaution to be observed during blasting, use of detonators and test, competency certificates for handling explosives.
- 17.2. **Management of Engineering Stores: General**—Procurement of stores, records and returns, disposal of released and surplus stores-return to Stores Depot, disposal by auction, verification of stock and adjustment for shortage/excesses.

24/7/19

18. **Track Machines**

- 18.1. Working of tamping machines in design mode.
- 18.2. Performance and quality parameters in tamping, squeezing pressure, squeezing time, vibration pressure and tamping depth.
- 18.3. Maintenance schedules of various track machines.

- (iii) General Knowledge: 15 Marks
- (iv) Questions on Official Language Policy: 15 Marks
- (v) Establishment & Financial Rules: 30 Marks

9/7/19

Sl. No	Name, Design/station & PF No.	Father's Name	Comm. (UR/SC/ST)	Present Grade	Date of Birth	Date of initial Apptt. & Grade	Date of Apptt./ promotion in Level-6	Date of Apptt./ promotion in Level-7	Date of receipt of application	Remarks (Eligible/ In eligible)
--------	-------------------------------	---------------	------------------	---------------	---------------	--------------------------------	--------------------------------------	--------------------------------------	--------------------------------	---------------------------------