

**दक्षिण रेलवे/Southern Railway**

मंडल कार्यालय/Divisional Office,
कार्मिक शाखा/ Personnel Branch,
सेलम/ Salem 636 005.

सं./No.SA/P.608/IIJE/P.Way/LDCE/e-36316

दि/Date: 20.12.2024.

Concerned SSEs/SA division

Sub: Selection for the post of Junior Engineer/P. Way in PML-06 against 20% LDCE quota in the Engineering department of SA division-reg.

Ref: i) This office notification of even no. dated 27.07.2023.
ii) This office letters of even no. dt 25.09.2023, 03.04.2024 & 16.08.2024, 27.08.2024 & 25.09.2024.

<<<<<>>>>>

With reference to the letters cited, the written examination for selection to the post of Junior Engineer/P. Way in PML-06 against the 20% LDCE quota in the Engineering department was held on 25.08.2024.

The Final Answer Key for the written examination was published vide this office letter dated 25.09.2024. However, after the final answer key was published, 06 representations were received challenging the final answer key.

Based on the representations received, the decision of the Question setting authority in connection with the final answer key is enclosed herewith.

The revised final answer key may kindly be treated as '**Final Answer Key**' and the key may be published to the examinees, subject to the changes accepted.

The decision of the Question Setting Officer after scrutinizing the objections/representations raised in publishing the key is now final and no further correspondence in this regard will be entertained.

Please note and notify the concerned accordingly.

Encl.: As above.

Digitally Signed by Ramesh
G

Date: 20-12-2024 10:45:23

Reason: Approved

सहायक कार्मिक अधिकारी/इंफ्रा
Assistant Personnel Officer/Infra
वरिष्ठ मंडल कार्मिक अधिकारी/सेलम
For Sr. Divisional Personnel Officer/SA

C/- Sr. DEN/Co.Ordn. /SA for kind information

S.No	Answer	S.No	Answer	S.No	Answer	S.No	Answer	S.No	Answer
1	C	26	C	51	D	76	A	101	C
2	D	27	A	52	C	77	C	102	C
3	B	28	C	53	D	78	B	103	B
4	B	29	A	54	C	79	B	104	B
5	B	30	C	55	B	80	A	105	D
6	D	31	C	56	C	81	A	106	C
7	A	32	B	57	D	82	A	107	C
8	C	33	B	58	A	83	C	108	B
9	A	34	C	59	A	84	A	109	A
10	B	35	A	60	A	85	C	110	B
11	C	36	C	61	C	86	B		
12	B	37	B	62	D	87	D		
13	C	38	C	63	B	88	D		
14	C	39	C	64	B	89	B		
15	B	40	D	65	A	90	C		
16	A	41	A	66	B	91	A		
17	C	42	D	67	A	92	B		
18	C	43	A	68	A	93	C		
19	D	44	A	69	A	94	A		
20	B	45	D	70	C	95	C		
21	A	46	C	71	Any option	96	A		
22	B	47	A	72	A	97	C		
23	A	48	D	73	B	98	B		
24	A	49	A	74	B	99	A		
25	A	50	B	75	A	100	A		

Encl: Details

Final answer key reference:

4. Speed indicator is a Fixed Signal (option (B) final answer)- Representation already accepted.

5. HOER is the short form of (Final Key Representation rejected option (B) final answer)
Explanation below:

The Hours of Employment Regulation (HOER)

6. Solar energy is (Final key representation rejected, option (D) is the final answer)
Explanation below:

AI Overview

Listen

Solar energy is not 100% green, but it is a renewable energy source that has a smaller environmental impact than other power generation methods:

Manufacturing

The extraction and chemical separation of minerals like copper, nickel, and cadmium used to make solar panels is polluting.

Carbon footprint

The carbon footprint of a solar panel can vary depending on where it is produced. For example, a panel produced in China can have up to twice the carbon footprint of a panel produced in Europe.

End of life

Solar panels only produce electricity during peak hours.

Cleaning

The location and water used to clean solar panels can affect the environment.

Environmental impact

Solar power is a renewable, CO2-free power source that has a smaller environmental impact than other power generation methods.

Energy production

The energy produced by solar panels far exceeds the energy required to make them.

11. TRR primary proposal is based on (Final key representation rejected option (C) final answer). Explanation below:

TRR(Primary) will be done based on age and condition basis.

14. The straight edge required to measure tolerance of weld is option (c) Representation already accepted.

23. Part-17 of the constitution of India contains how many articles for the purpose of Official language (answer given is (C) to be corrected as (A) – Representation accepted.

Parts and Subject

Articles

Part XVI Official Language

343 – 351

28. Which of the following allowance will not be taken into account for calculation of hourly rate of overtime allowance? Final key Representation rejected option (C) is final answer.

31. Permissible tolerance for in service rails for AT welding (answer corrected (C) instead of (B))- Representation already accepted.

45. Types of tamping are: Tamping involves all the options. Final Key Representation rejected option (D) is final answer.

47. The minimum progress of DTE per 1 hr of effective line block is option (A) Representation already accepted.

48. Unit of recording of progress by track machines in terms of : Progress will be report in all the units. Final Key Representation rejected option (D) is final answer.

61. Acceptance USFD test for AT weld to be conducted within : Immediately after welding. Final Key representation rejected option (C) is final answer.

63. On detection of defect in stock and tongue of rail of SEJ/ISEJ and gap avoiding rail of ISEJ, SSE/JE(P.way)/USFD shall impose speed restriction : Final Key Representation rejected option (B) is final answer: Explanation below:

11.8.7 Testing frequency: Testing frequency of stock and tongue rail of SEJ/ISEJs and gap avoiding rail of ISEJ shall be same as that for normal track as stipulated in the Para 6.6.1.1, without considering any reduced frequency testing period.

11.9 Action to be taken after detection of defect: On detection of defect in stock and tongue rail of SEJ/ISEJ and gap avoiding rail of ISEJ, SSE/JE(P.Way) USFD shall impose speed restriction of 20 KMPH or stricter immediately and communicate to section al SSE/JE(P.Way) about the flaw in SEJ/ISEJs with its location, who shall ensure the protection of defective SEJ/ISEJs by deputing a permanent watchman till the SEJISEJs is replaced. The defective SEJ/ISEJ shall be replaced within 3 days of detection.

64. In case of RF within 5 years of TRR(P), action required is : Final Key Representation rejected option (B) is final answer. Explanation below: (Sending rail piece to CMT)

- i) In case of repetitive failures of rails of same rolling mark, irrespective of the type of fracture/flaw, short rail piece of approximately 1m long (500mm+500mm) containing the fracture/flaw detected visually or by ultrasonic flaw detector should be sent to the Chemist and Metallurgist together with a rail failure report for metallurgical investigation.

65. Couplant used for USFD testing Final Key Representation rejected option (A) is final answer. Explanation below:

10.4.3 Calibration: Calibrate the unit for 300mm range for testing the rail while probing from top of the rail and for 100mm range while testing from the side head and web.

10.4.4 Testing: After calibration of the unit the rails shall be tested manually using double crystal normal probe 4.0 MHz frequency with water/oil as couplant. The rails shall be tested by probing from the rail head top, rail head side and web. Typical oscillogram pattern for various probe positions are given for guidance as indicated below:

71. Minimum ballast cushion required for loopline is Representation Accepted: Considered. Since, inadvertently C option is repeated twice in question.

74. Fish plate joint is not permitted : Final key Representation rejected option (B) is final answer explanation below:

- (b) No fish-plated joint should be located on the girder or within six metre from either abutment. In all such cases rail free fastenings, such as rail free clips shall be used, so that relative movement between rail and sleepers may take place.

75. The top table of guard rail in tunnel with reference to main line can be Final key Representation rejected option (A) is final answer: explanation below

The top table of the guardrail should not be lower than that of the running rail, by more than 25 mm. In the case of bridges on curves with canted track, the difference should be measured with reference to a straight line connecting the running tables of inner and outer rails.

79. Permissible curvature in Zone II in LWR : Refer Para 326 of IRPWM Final Key Representation rejected option (B) is final answer: explanation below

A. General Instructions:

Continuation of LWR on sharp curves and steep gradients upto limits stipulated in the table below for all four temperature zones shall be permitted by Principal Chief Engineer either through PCE circular or on case to case basis subject to fulfilment of all stipulations mentioned herein and in IRPWM considering the site specific conditions:

Temp. Zone	Sharpest permitted degree of curve	Steepest permitted gradient	Sharpest permitted degree of curve with steepest gradient
Zone-I	6.5	1 in 65	5 degree with 1 in 65
Zone-II	6.5	1 in 65	5 degree with 1 in 65

81. Before laying LWR foot by foot survey is done by – Final Key Representation rejected option (A) is final answer

84. SBCM can be deployed in LWR. Final Key Representation rejected option (A) is final answer. (No norms for deploying machine)

88. Breathing length in Zone II with wider base sleeper with 1660 is Final Key Representation accepted option (D) is final answer

Annexure - 3/16 (Para 335)

BREATHING LENGTHS ON PRC SLEEPERS

Zone	Sleeper Density	Breathing length(in meters)		
		60 Kg/m Conventional PSC sleeper	52 Kg/m Conventional PSC sleeper	60 Kg/m Wider PSC sleeper
I	1540	60	52	-
	1660	58	50	44
II	1540	69	59	-
	1660	66	57	52
III	1540	74	64	-
	1660	77	66	59
IV	1540	82	71	-
	1660	79	68	56

Note: Breathing lengths given above are indicative and are likely to vary as per site conditions

90. Ballast profile of LWR to be checked by SSE/P.way (Incharge) at a frequency of Final Key Representation rejected option (C) is final answer explanation below:

F. In addition to the regular inspections and duties, following shall also be monitored **by SSE/P.Way(In-charge) once in a month and by ADEN once in three months** for proper behavior of LWR and track conditions.

93. Permissible lateral wear Group A&B route for 60kg rails. Final Key Representation rejected option (C) is final answer explanation below:

(iv) Lateral Wear-Limits of lateral wear from relaying considerations are as under

Section	Category of track	Lateral wear
Curves	'A' & 'B' Routes	8 mm
	'C' & 'D' Routes	10 mm
Straight	'A' & 'B' Routes	6 mm
	'C' & 'D' Routes	8 mm

96. In alignment, permissible SD in short chord for speeds more than 100 kmph. Final Key Representation rejected option (A) is final answer explanation below:

(a) SD Values for Unevenness and Alignment:

Sl No	Parameter	Speed upto 100 Kmph	Speed above 100 Kmph; and up to 160 Kmph
1	UN - 1	2.0 mm	1.4 mm
2	UN - 2	-	1.9 mm
3	AL - 1	1.4 mm	1.1 mm
4	AL - 2	-	1.3 mm

98. When UML is reported by TRC – Final Key Representation rejected option (B) is final answer explanation below:

1. **Action to be taken on exceedance of UML:**

Spots/blocks exceeding track Parameter limits, and acceleration peak limits set as UML should be noted by the ADEN and SSE accompanying the TRC and suitable speed restrictions have to be immediately imposed, which shall be relaxed only after suitable attention / maintenance of track at concerned location. Similar action should be taken on exceedance of UML during OMS run also.

105. When the corrosion is more than 1.5 mm at liner seat – Final Key Representation rejected option (D) is final answer (Destressing without liner shifting is to be done)

109. In W/L board height and width of letter is – Final Representation Accepted option (a) instead of B (300 & 40)

Sl.No.	Q.No.	Question detail	Final Answer	Remarks
1	12	Mass scale ERC greasing requires	B	Not accepted
2	18	In which rule of Official Language Rules have been mentioned about the imperative of issuing bilingual form manuals, codes, other literature related to process etc.	C	Not accepted
3	32	R260 rail section is classified under	B	Not accepted
4	34	The portion used for welding shall conform to the technical requirements as mentioned	C	Not accepted
5	43	Frequency of FBW testing of 60 kg UIC rails for Mobile welding plant and stationary welding plant.	A	Not accepted
6	44	Minimum duration of Line block for UNIMAT for packing point and crossing.	A	Not accepted
7	46	During deep screening with BCM, if tamping machines and DTS fails speed restriction to be imposed.	C	Not accepted
8	50	Base depot is required for the following machines	B	Not accepted
9	55	N of probes in DRT with B scanner is	B	Not accepted
10	56	Cracks lesser than --- size cannot be detected by the present UDFD	C	Not accepted
11	57	A welder joint showing moving signal of 30% or more of FSH shall be classified as	D	Not accepted
12	59	DFWN to be removed within	A	Not accepted
13	62	Testing frequency of stock and tongue rail of SEJJ/ISEJs and gap avoiding rail of ISEJ shall be	D	Not accepted
14	82	One round of stabilization by Dynamic Track stabilizer is equal to	A	Not accepted
15	87	After emergency attention speed permissible to first train is	D	Not accepted
16	91	Cant gradient for virtual curve is taken as	A	Not accepted
17	101	MFBW machine is	C	Not accepted
18	107	Deep screening to be planned for Main line	C	Not accepted
19	110	Post accident restoration to be targeted with	B	Not accepted

12. Not accepted. Explanation given below.

In view of safety, day caution is to be issued.

18. Not accepted. Explanation given below.

il-language-rules-1976

10. Working knowledge of Hindi-

1. An employee shall be deemed to have acquired a working knowledge of Hindi -
 - a. If he has passed -
 - i. the Matriculation or an equivalent or higher examination with Hindi as one of the subjects ; or
 - ii. the Pragma examination conducted under the Hindi Teaching Scheme of the Central Government or when so specified by that Government in respect of any particular category of posts, any lower examination under that Scheme ; or
 - iii. any other examination specified in that behalf by the Central Government; or
 - b. if he declares himself to have acquired such knowledge in the form annexed to these rules.
2. The Staff of a Central Government office shall ordinarily be deemed to have acquired a working knowledge of Hindi if eighty per cent of the Staff working therein have acquired such knowledge.
3. The Central Government or any officer specified in this behalf by the Central Government may determine whether the staff of a Central Government office has acquired a working knowledge of Hindi.
4. The names of the Central Government offices, the staff whereof have acquired a working knowledge of Hindi, shall be notified in the Official Gazette:

Provided that the Central Government may if it is of opinion that the percentage of the staff working in a notified office and having a working knowledge of Hindi has gone below the percentage specified in sub-rule (2) from any date, it may, by notification in the Official Gazette, declare that the said office shall cease to be a notified office from that date.

11. Manuals, Codes, other procedural literature, articles of Stationery, etc.-

1. All manuals, codes and other procedural literature relating to Central Government offices shall be printed or cyclostyled, as the case may be, and published both in Hindi and English in diglot form.
2. The forms and headings of registers used in any Central Government office shall be in Hindi and in English.
3. All name-plates, sign-boards, letter-heads and inscriptions on envelopes and other items of stationery written, printed or inscribed for use in any Central Government office, shall be in Hindi and in English:

Provided that the Central Government may, if it is considered necessary to do by general or special order exempt any Central Government office from all or any of the provisions of this rule.

32. Not accepted. Explanation given below:

6.	60 kg / 60 E 1. R260 grade rail
----	---------------------------------

34. Not accepted. Explanation given below:

4.2 Portion for welding

- 4.2.1 The portion used for welding shall conform to the technical requirements as mentioned in IRST -19 – 2021. The suitability of the portion for the welding process in

43. Not accepted. Explanation given below:: correction slip no.4-MFBW Manual

Sample joints for first 1,000 joints will be tested at frequency of 1 in 100 joints and subsequently at a frequency of 1 in 1000 joints

44. Not accepted. Explanation given below

606 Minimum Duration of Blocks - Minimum duration of blocks for effective working, ineffective time and ideal stipulated output per effective hour shall be as follows:

(1) Track machines are deployed for variety of track works and their proper utilization has to be ensured by making available minimum duration of blocks for smooth, safe and effective working. Minimum duration of block is fixed based on setting up/winding up time, ineffective time and progress per effective hour. Minimum block duration etc. for different types of machines is given in table below:

M/c Type	Minimum Block (hr.) (min)	Ineffective time (hr.) (min)	Output / eff. Hr.
DUO	2.50 (150 min)	0.50 (30 min)	800 m
CSM	2.50 (150 min)	0.50 (30 min)	1200 m
TEX	2.50 (150 min)	0.50 (30 min)	1600 m
UNIMAT	2.50* (150 min)	0.50 (30 min)	1 turnout
BCM(Plain)	3.00 (180 min)	1.00 (60 min)	200 m

46. Not accepted. Explanation given below

If machines fails, due to track parameter and safe running of trains it will be consider as 20 kmph.

50. Not accepted. Explanation given below

(Base depot is required only for TRT and SQRS)

55. Not accepted. Explanation given below

(18 number of probes in DRT and SRT is 9 probes at B-Scanner For SRT machine testing one rail at a time the probes required are, $3 \times 2 = 6$ 70deg probes+ 2 37deg probes+ 1 no. of 0 deg probe. Total 9 probes for SRT and hence for DRT testing double rail at a time $9 \times 2 = 18$ probes.)

56. Not accepted. Explanation given below

(v) If sensitivity of the machine is poor or battery gets discharged the operator may miss the flaw signal. Hence, it is essential to ensure full charging of the battery.

(vi) The ultrasonic probes used in the rail testers have a frequency of 4 MHz (longitudinal wave) and 2 MHz (transverse waves). Therefore, cracks lesser than 0.8mm size cannot be detected by the present arrangement.

The sized and frequency of the probes employed in the single rail tester/double rail tester are as under.

57. Not accepted. Explanation given below

8.6.3 Test procedure:

Place the probe on the rail head on one side of the AT welded reinforcement and move toward the weld in zig-zag manner. This exercise shall be repeated 2-3 times. The same shall be carried out from both sides of the weld.

8.6.4 Defect classification:

I. Initial testing :

- I. A welded joint showing moving signal of 30% or more of FSH shall be classified as DFWN.

59. Not accepted. Explanation given below

The defective joints (DFWN) based on the criteria mentioned in preceding paras and para 8.12.3 shall not be allowed to remain in service and shall be removed within a period of 1 month after initial USFD testing of AT welds. The protection of defective joints (DFWN) shall be ensured by joggled fish plate with two tight clamps immediately along with proper support on wooden block till its removal. During subsequent testing within the guarantee period of contract defective joints (DFWO or DFWR) shall be cropped, re-welded and tested again. The re-welded joints shall be scanned ultrasonically again with the same set of acceptance criteria to ensure freedom from any harmful defects.

ACS 01 dated 04.05.2023

62. Not accepted. Explanation given below

11.8.7 Testing frequency: Testing frequency of stock and tongue rail of SEJ/ISEJs and gap avoiding rail of ISEJ shall be same as that for normal track as stipulated in the Para 6.6.1.1, without considering any reduced frequency testing period.

11.9 Action to be taken after detection of defect: On detection of defect in stock and tongue rail of SEJ/ISEJ and gap avoiding rail of ISEJ, SSE/JE (P.Way)/USFD shall impose speed restriction of 20 KMPH or stricter immediately and communicate to sectional SSE/JE (P.Way) about the flaw in SEJ/ISEJs with its location, who shall ensure the protection of defective SEJ/ISEJs by deputing a permanent watchman till the SEJ/ISEJs is replaced. The

82. Not accepted. Explanation given below

(5) Consolidation of track can be achieved by the following:-(Back to Para 117(4) (a))

(a) For Existing track where maintenance activity involving disturbance to ballast

compaction (tamping operation) has been undertaken.

- (i) For the track structure consisting of concrete sleepers, passage of at least 50,000 gross tonnes of traffic or a period of two days whichever is later.

(or)

- (ii) At least one round of stabilization by Dynamic Track Stabiliser (DTS)

87. Not accepted. Explanation given below

4	After emergency repairs to track after buckling	
i	First train	STOP DEAD & 10

91. Not accepted. Explanation given below

The formula (a) and (b) are based on rate of change of cant and of cant deficiency of 50 mm per second. The formula (c) is based on the maximum cant gradient of 1 in 720 or 1.4 mm per metre. The length of transition so calculated should be rounded off to the next higher value in multiple of 10 m.

101. Not accepted, Explanation given below

Since the MFBW can be work in track and also in CESS answer is offline and online

107. Not accepted. Explanation given below

- (e) 1 Deep screening of Track shall be carried out

For Plain Track on Main line

- If the clean ballast cushion is less than 200 mm for section having sectional speed of 130 kmph and above.
- If the clean ballast cushion is less than 150 mm for section having sectional speed less than 130 kmph

For Turnout on Main line

If the clean ballast cushion is less than 200 mm

110. Not accepted. Explanation given below:

In view of safety and to run train – Giving track at the earliest duly ensuring track safety irrespective of speed