

QUESTION PAPER

WRITTEN EXAMINATION FOR SELECTION FOR PROMOTION FROM
GROUP 'C' TO GROUP 'B' SERVICE TO THE POST OF AEN/NR(GR. B)
AGAINST 70% QUOTA IN CIVIL ENGINEERING DEPARTMENT,
NORTHERN RAILWAY.

DATE OF EXAMINATION: 18.02.18
MAXIMUM MARKS: 150

ASSESSMENT PERIOD : 2017-19
TIME ALLOWED : 03 Hrs.

1. There are four Sections (A, B, C & D) in the Question Paper.
 - **Section A** has 30 Multiple Choice Questions (MCQs) and all Questions are compulsory. There is no negative marking. Each Questions carries 1.5 marks. Total Marks for **Section A=45**.
 - **Section B** has two parts (Part I and Part 2) Candidates have to attempt either Part 1 or Part 2. Part 1 has 6 questions (subjective type) out of which three have to be attempted for 5 marks each. Part 2 has 10 MCQs on Rajbhasa of 1.5 marks each. Total Marks for **Section B=15**.
 - **Section C** has 10 Questions. Candidates have to attempt any 4 questions for 5 marks each. Total Marks for **Section C=20**.
 - **Section D** has 15 questions. Candidates have to attempt any 7 questions for 10 marks each. Total Marks for **Section D=70**.
2. All questions carry marks as indicated against each.
3. All questions should be answered only in the Answer Sheet and no question is to be answered in Question Paper. In MCQ, please write question number followed by answer in **Capital Letters**. Cutting, overwriting & erasing in MCQs is not permitted.
4. Candidates having found writing name/leaving any other identification marks in Answer Sheet shall be ignored during evaluation/disqualified.
5. Answers may be written either in English or in Hindi.
6. In case of any ambiguity in the Hindi version, the English version is to be considered authentic.

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Section – A

30 x 1.5 =
45marks

1. Steep gradients which need extra engine for hauling is known as
 - A) Pusher gradient
 - B) Ruling Gradient
 - C) Reasonable gradient
 - D) Momentum gradient
2. Tilting of rails is done at a slope of
 - A) 1 in 30
 - B) 1 in 25
 - C) 1 in 20
 - D) 1 in 15
3. What is the weight per meter length of 52 kg Rail?
 - A) 54.14 kg
 - B) 50.25 kg
 - C) 51.89 kg
 - D) 53.85 kg
4. What is the height of 60 kg rail section?
 - A) 180 mm
 - B) 172 mm
 - C) 185 mm
 - D) 165 mm
5. What is the assessed GMT service life of 60 kg 90 UTS rail?
 - A) 650 GMT
 - B) 600 GMT
 - C) 800 GMT
 - D) 500 GMT
6. What is the Highest speed of train in Indian Railway
 - A) 140 KMPH
 - B) 120 kmph
 - C) 160 kmph
 - D) 130 kmph
7. Minimum radius of curve on Broad gauge
 - A) 175 meter
 - B) 215 meter
 - C) 146 meter
 - D) 200 meter
8. How many sleepers are there in Fan shaped 1 in 12 turnout
 - A) 85 sleepers
 - B) 96 sleepers
 - C) 90 sleepers
 - D) 100 sleepers
9. Maximum distance apart of trolley refuges on bridges with main spans of 100metre or more is
 - A) 50 mtr
 - B) 100 mtr
 - C) 200 mtr
 - D) a refuge over each pair

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10. What is speed restriction on deep screening site done by BCM and tamped by machine followed with DGS?
A) 20
B) 30
C) 40
D) 10
11. An accident will be termed as serious accident when the loss of Railway property is more than
A) 03 lacs
B) 10 lacs
C) 25 lacs
D) 15 lacs
12. The maximum gradient in station yards should be Unless special safety devices are adopted and/or special rules enforced.
A) 1 in 400
B) 1 in 500
C) 1 in 1000
D) 1 in 600
13. Aeration Of water is done to remove
A) Odour
B) Colour
C) Bacterias
D) Hardness
14. The pumping system should be capable of supplying the normal quantity of water required in 24 hours in
A) 12 hours or less
B) 16 hours or less
C) 20 hours or less
D) 8 hours or less
15. Camber in steel triangulated girder is provided to compensate for deflection
A) Under live load and dead load
B) Under live load
C) Under dead load
D) None of the above
16. Bearings are provided in bridges to transfer the load to
A) Super structure
B) Track
C) Embankment
D) Sub structure
17. The diameter of hole for 20 dia rivet shall be
A) 23 mm
B) 18 mm
C) 21.5 mm
D) 22 mm

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18. In the eight digit code given in the rating system the first digit is called --
A)URN
B) ORN
C) CRN
D) None of the above
19. Elcometer is used to measure the
A) Cross level
B) Gauge
C) Thickness of paint
D) All the above
20. Clear distance between consecutive sleepers not to exceed on bridges in BG is
A) 450 mm
B) 600 mm
C) 510 mm
D) 500 mm
21. A level crossing qualifies for construction of Road Over Bridge/ Under Bridge on Cost sharing basis with State Government when the Train Vehicle Unit is more than
A) 1,00,000
B) 2,00,000
C) 3,00,000
D) 5,00,000
22. The maximum pressure which the soil can carry safely without the risk of shear failure is called
A) Safe bearing capacity
B) Ultimate bearing capacity
C) Allowable bearing capacity
D) Shear bearing capacity
23. Number of bricks required for 1 cubic meter of brick masonry is
A) 400
B) 450
C) 500
D) 550
24. What is Pre Heating Temperature of rail ends in AT Welding?
A) $300 \pm 20^{\circ}\text{C}$
B) $400 \pm 20^{\circ}\text{C}$
C) $500 \pm 20^{\circ}\text{C}$
D) $600 \pm 20^{\circ}\text{C}$
25. Defect of lack of fusion is mainly due to?
A) Improper heating.
B) Improper Gap
C) Improper grinding
D) None of above

26. On Rajdhani routes testing frequency of rail testing for rail section of 60kg with annual GMT 80, will be.
- A) 4 months
B) 1 ½ months
C) 1 months
D) None of above
27. A series of closely spaced contour lines represent a
- A) Steep slope
B) Gentle slope
C) Uniform slope
D) Plane surface
28. The purpose of reconnaissance survey
- A) To determine technical feasibility of the line
B) To assess whether such a line is required or not
C) To decide the final alignment of the railway line
D) None of the above
29. Number of sleepers required having sleeper density of M:7 for one Km of BG single line is
- A) 1360
B) 1540
C) 1660
D) None of the above
30. Height of high level platform for passengers for BG is --- high
- A) 0.455 m
B) 0.560 m
C) 0.650 m
D) 0.760 m

Section – B

15 marks

- Part 1** Write short notes on (Attempt any three)
- i) Fracture Repair.
ii) List different river training works adopted in Indian Railways
iii) Leaky roof treatment.
iv) Concrete mix design & factors influencing the choice of mix proportion.
v) List different types of Pile foundations.
vi) List different methods of elimination of unarmred level crossing.

3 x 5 =
15marks

OR

Part 2 RAJBHASHA

10 x 1.5 =
15 marks

1. संसदीय राजभाषा समिति में कुल कितने सदस्य होते हैं ?
- (क) 10
(ख) 16

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- (ग) 30
(घ) 20
2. हिंदी दिवस कब मनाया जाता है?
(क) 18 जून
(ख) 14 सितम्बर
(ग) 14 अक्टूबर
(घ) 15 जनवरी
3. धारा 3(3) के अंतर्गत जारी किए जाने वाले कागजात किन-किन भाषाओं में जारी किए जाते हैं ?
(क) हिंदी-उर्दू
(ख) हिंदी -अंग्रेजी
(ग) हिंदी-पंजाबी
(घ) अंग्रेजी-तमिल
4. धारा 3(3) के अंतर्गत जारी किए जाने वाले कागजातों को हिंदी-अंग्रेजी दोनों भाषाओं में जारी करने का उत्तरदायित्व किसका है?
(क) कार्यालय प्रधान का
(ख) राजभाषा अधिकारी का
(ग) कागजात बनाने वाले कर्मचारी का
(घ) कागजात पर हस्ताक्षर करने वाले अधिकारी का
5. रेलवे बोर्ड द्वारा काव्य लेखन के लिए कौन सा पुरस्कार प्रदान किया जाता है ?
(क) प्रेमचंद
(ख) मैथिलीशरण गुप्त
(ग) राजीव गांधी
(घ) लाल बहादुर शास्त्री
6. राजभाषा नियम, 1976 के संदर्भ में भाषिक क्षेत्र के हिसाब से हिमाचल प्रदेश किस क्षेत्र के अंतर्गत आता है?
(क) क क्षेत्र
(ख) ख क्षेत्र
(ग) ग क्षेत्र
(घ) इनमें से कोई नहीं।
7. किसी कार्यालय को कितने प्रतिशत अधिकारी/ कर्मचारियों के हिंदी का कार्यसाधक ज्ञान रखने पर अधिस्तुत किया जा सकता है ?
(क) 100%

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- (ख) 80%
(ग) 60%
(घ) 50%
8. उत्तर रेलवे प्रधान कार्यालय में गठित क्षेत्रीय राजभाषा कार्यान्वयन समिति की वर्ष में कितनी बैठकें आयोजित की जाती हैं ?
(क) 04
(ख) 03
(ग) 02
(घ) 01
9. राजभाषा पखवाड़े का आयोजन किस माह में किया जाता है?
(क) जून
(ख) सितम्बर
(ग) जुलाई
(घ) दिसम्बर
10. केंद्र सरकार के कार्यालयों में रबर की मुहरें किन-किन भाषाओं में होनी चाहिए ?
(क) हिंदी में
(ख) अंग्रेजी में
(ग) हिंदी-अंग्रेजी में
(घ) प्रान्तीय भाषाओं में

Section – C

4x5=
20marks

Write short notes on (Attempt any Four)

- i) Different minor Penalties under D&AR.
- ii) Minimum Wages Act
- iii) Earnest Money
- iv) Security Deposit
- v) Stock sheet
- vi) Completion Report
- vii) Imprest Store
- viii) Types of Level – xings based on TVU
- ix) List any five types of bearings used in Railway Bridges.
- x) Where is an employee taken up under D&AR rules in Railways? What is Standard Form Nos. for Major & Minor penalties.

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Section – D (Attempt any Seven)

7x10
=70marks

- Q.1 a) What are the categories of bridges in Railways on the basis of consideration of water way?
b) What is a distressed bridge? What are categories of distressed bridges and what is the SR imposed on distressed bridges?
- Q.2 Name any three small track machines used on
a) Rail and
b) Welding Operation in Railways.
- Q.3 Describe briefly the criteria for 52 Kg rail renewal.
- Q.4 Write a short note on Rain Water Harvesting.
- Q.5 Describe Maintenance precaution to be taken in LWR Track.
- Q.6 Describe precautions to be taken to improve quality of AT welding.
- Q.7 Write short notes on Pre & Post tamping works in PSC track while tamping with CSM machine.
- Q.8 Write short note on Hot Weather Patrolling.
- Q.9 Describe briefly Monsoon Precautions.
- Q.10 Write short note on Protection of rail from liner biting.
- Q.11 Describe the method of taking up mechanised renewal of PSC sleepers in electrified track with PQRS.
- Q.12 What precautions should be observed while unloading a Ballast DMT in the section?
- Q.13 List the important safety aspects, to be inspected during inspections of manned level crossing?
- Q.14 Write down any two probes being used in USFD testing & their purpose. What immediate action has to be taken after detection of IMR defect by
(a) SSE/JE(USFD) (b) SSE/JE(P. Way).
- Q.15 For a 1° curve on BG 110 Km/h line with 80mm cant and 100 meter transition length find out Safe & equilibrium speed and rate of change of cant and cant deficiency at 110 Km/h

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