

Departmental Examination विभागीय परीक्षा
(Against Departmental Selection Quota, 30%) 30 प्रतिशत कोटा
के विरुद्ध सहायक इंजीनियर (ग्रुप-बी) के पद हेतु चयन

For

Group 'B' AEN's posts in
CIVIL ENGINEERING DEPARTMENT (सिविल इंजीनियरिंग विभाग)

Question Paper-II (Civil Engineering Railways) प्रश्न पत्र-II सिविल इंजीनियरिंग रेलवेज

Date दिनांक 24.06.2018

Time: 3 hours समय-तीन घंटा

Max. Marks: 150 अधिकतम अंक-150

Notes:

- i) Candidates should check the page numbers of the answer sheets before writing their roll number, name etc. on the fly leaf.
- ii) Question paper is being given both in English and Hindi languages. In case of any ambiguity in the two versions, English version will be considered as authentic. The candidates have the option to answer the questions in any of the two languages.
- iii) The paper is divided in three sections, viz A, B & C. Instructions for each section are indicated at the beginning of each section.
- iv) Section A contains objective type questions consisting of multiple choice types, fill in the blanks and True/False type questions. Correct choice/answer shall be written carefully in the answer book. **Correction of any type for these answers like over writing, cutting and re-writing, erasing, scoring out a ticked answer and ticking another answer, is NOT permissible. In case any correction is made, that answer will not be evaluated.**
- v) Candidates should not write their name, Roll No., Initials, designation, signature, address or any other identification mark any where on the answer paper, as this will disqualify them for the selection. They should not draw any symbol, sign or write such things as Shri Ganeshaya namah, Hari Om, Om, Shri Swami Samarth etc., etc, on their answer papers. They should not use coloured pens other than blue or black pens for writing the examination.
- vi) Candidates are allowed to use own calculator but no other device capable of receiving/ transmitting signals like mobile phone etc. will be allowed.

टिप्पणी:-

1. फ्लाई लीफ पर नाम/पदनाम/क्रमांक लिखने के पूर्व उत्तर पुस्तिका के पृष्ठों की संख्या को सुनिश्चित कर लिया जाये।
2. प्रश्न पत्र द्विभाषी (अंग्रेजी एवं हिन्दी) में दिये गये हैं। दोनों भाषाओं के प्रश्न पत्रों में अगर विरोधाभास मिलता है, तो अंग्रेजी भाषा का प्रश्न पत्र सही माना जाये। परीक्षार्थी को हिन्दी अथवा अंग्रेजी किसी एक भाषा में प्रश्नों के उत्तर देने हैं।
3. प्रश्न पत्र को तीन भागों में विभक्त किया गया है, जैसे- 'क', 'ख' तथा 'ग'। प्रत्येक भाग के प्रारम्भ में उस भाग से सम्बन्धित निर्देश अंकित किये गये हैं।
4. भाग 'क' में वस्तुनिष्ठ प्रश्न दिये गये हैं जैसे कई विकल्पों वाले प्रश्न, खाली जगहों को भरने और सत्य/असत्य प्रकार के प्रश्न। सही चयन/उत्तर को उत्तर पुस्तिका में सावधानी पूर्वक लिखा जाये। दिये गये उत्तर में किसी भी प्रकार का सुधार/परिवर्तन जैसे लिखे के उपर फिर से लिखना (**Over Writing**) पहले लगाई टिक को काट कर दूसरा टिक करना, उत्तर काट कर फिर से लिखना आदि करने की अनुमति नहीं है। यदि कोई सुधार/परिवर्तन किया जाता है तो उस उत्तर का मूल्यांकन नहीं किया जायेगा।
5. उत्तर पुस्तिका में अपना नाम अथवा अन्य कोई पहचान बिना नाम/पदनाम/क्रमांक या अन्य कोई पहचान का चिह्न अंकित न करें। अन्यथा ऐसे प्रयास से आप अयोग्य घोषित हो जायेंगे। परीक्षार्थियों को किसी प्रकार का पहचान बिना या कोई नाम जैसे - श्री गणेशाय नमः, हरिओम, ओम, श्री स्वामी समर्थ आदि, आदि भी नहीं बनाना है। काले अथवा नीले स्याही के पेन के अतिरिक्त अन्य किसी रंग के पेन का प्रयोग भी वर्जित है।
6. अर्थार्थियों को कैलकुलेटर का उपयोग करने की अनुमति है लेकिन सिगनल प्राप्त करने/प्रेषित करने में सक्षम कैलकुलेटर फोन आदि जैसी कोई अन्य डिवाइस की अनुमति नहीं होगी।

PAPER II

SECTION – A

(Max. Marks = 50)

(Establishment & Financial Rules)

Note : All questions are compulsory. Marks carried by a question are indicated against each question.

Question 1 : Write Full form of the following:

(5 x 1 = 5 marks)

- i. DCRG
- ii. DRF
- iii. DF
- iv. ACSPP
- v. EBR IF

Question 2: Write short notes on any Five of the following:

(5 x 6 = 30 Marks)

- a. Leave Encashment in Railways
- b. Performance Guarantee in Works Contracts
- c. Commutation of Pension
- d. LAW Book
- e. Variation of Quantities in Works Contracts
- f. Deposit works
- g. Detailed Estimate
- h. Minor Penalties

Question 3 : Describe briefly the procedure for imposition of Major Penalty under the Railway Servants (Discipline & Appeal) Rules 1968

OR

Mention any 10 (Ten) General Conduct Rules for a Railway Servant as per Rule 3(1) of the Railway Services (Conduct) Rules , 1966.

(15 marks)

SECTION –B

(Max. Marks = 28)

Note: All questions under this section are compulsory.

Question 4 : Select the most suitable option as answer:

(10 x 1= 10 Marks)

i. At present maximum permissible speed on 1 in 12 curved switch is:

- A. 20kmph B. 15 kmph C. 30 kmph D. 45 kmph

ii. In M35 grade concrete , 35 indicates the compressive strength at :

- A. 14 days B. 21 days C. 28 days D. 7days

- iii. Maximum value of cant excess on D Route should not exceed :
 A. 50 mm B. 75 mm C. 65 mm D. 100 mm
- iv. As per extant instructions Minimum depth of Ballast below bottom of sleeper at rail seat in case of through sleeper renewal on Broad Gauge LWR section should be:
 A. 275 mm B. 250 mm C. 350mm D. 300 mm
- vi. Soundings at specified bridges should be taken :
 A. At mid span B. Around pier
 C. At high flood level D. All of above
- vii. Required Minimum Horizontal clearance of any structure(other than platform) below rail level upto formation level measured from Centre line of track and at right angle to the track on curves with radius less than 875 m) is:
 A. 1905 mm B. 2725 mm C. 2135mm D. 2575 mm
- viii. For effective disinfection of water by Chlorination , the residual chlorine at the farthest point of supply should normally be not less than :
 A. 0.2ppm B. 0.3ppm C. 0.1 ppm D. 0.5ppm
- ix. The steepest gradient permitted for laying of LWR in BG track is :
 A. 1 in 50 B. 1 in 100 C. 1 IN 200 D. 1 IN 150
- x. Maximum degree of curve permitted on BG track with check rail provision is :
 A. 6 degree B. 8 degree C. 10 degree D. 12 degree

Question 5: Fill in the blanks with most suitable answer: (10 x 1 = 10 marks)

- i. The rise in flood water level due to obstruction created by reduction in width of flow is known as
- ii. For relaying of points & crossings Track machine is used.
- iii. Index Plans are prepared to a horizontal scale of
- iv. On bridge approaches a rail closer laid permanently in track should not be less than in length.
- v. Destressing temperature for LWR track with 52 kg rails laid on PSC sleepers with 1540 Nos per km or more in temperature Zone –IV in degree Celsius should be
- vi. A CRN rating of "0" (ZERO) for a component of a bridge signifies that
- vii. A vertical curve should be provided when change in gradient at a point is more than%.
- viii. For tamping of Turnouts Track machine is used.
- ix. Validity of Competency Certificate of AT welder is

- x. Hot weather Patrolling is required to be done if the rail temperature is likely to exceed in degree Celsius.

Question -6 : Match the following pairs correctly:

(3 x1 = 3 Marks)

- | | |
|----------------------|-------------------|
| a. BCM | 1. Radius |
| b. Bleaching Powder | 2. Dykes |
| c. Chord | 3. Condonation |
| d. Speed Restriction | 4. Versine |
| e. Infringement | 5. Chlorination |
| f. USFD | 6. Caution Board |
| g. Degree | 7. IMR |
| h. River Training | 8. Deep screening |

SECTION –C

(Max. Marks = 72)

Note: Answer any three questions. Each question carries 24 marks.

Question 7 :Write short notes on any Four of the following: (4 x 6 = 24 Marks)

- Duties of Keyman
- Systemic Overhauling of Track
- Numerical Rating System for Bridge Inspection
- Seismic Retro fitting of existing buildings
- Relinquishing of surplus railway land
- Classification of Level Crossings
- Railway Affecting Works(RAW) / Works Affecting Railway Safety (WAR)

Question 8: For a new BG railway line with Maximum Permissible speed of 100 kmph, a curve of 600 metre radius is required to be provided with restricted transition length of 40 m on either sides. Design the curve for optimum speed potential as per provisions of IRPWM and calculate the maximum permissible speed over the curve. [Take Maximum permissible cant = 140mm; Permissible Cant excess/Cant deficiency = 75 mm; Max. cant /cant Deficiency gradient should not exceed 55mm per second and speed of slowest goods trains is 50 kmph].

Question 9: Write short notes on any Four of the following: (4 x 6 = 24 marks)

- Septic tank
- Absolute Block System (ABS) of Train Operations.
- Inspection of Points & Crossings
- Hot weather Patrolling
- Soundings of Bridges
- Classification of Railway Lines on BG routes
- Brief procedure for Acquisition of land for Railway Projects.

Question -10: Write short notes on any Four of the following: (4 x 6 = 24 marks)

- a. Working of plain track Tamping Machines in Design Mode
- b. Criteria for proposing Through Rail Renewal
- c. Procedure to be followed when the Contractor does not attend for witnessing measurements or accepts under protest.
- d. Major Bridges & Important Bridges in Railways?
- e. Protection of Track for works lasting over three days on Single Line BG section.
- f. Commercial Development of Railway Land or Rail Land Development Authority.
- g. Periodical Store Returns by Stock holders

Question-11: Describe the procedure for de-stressing of Long Welded Rails by using Rail Tensors under traffic block conditions.
