

WEST CENTRAL RAILWAY
Signal & Telecommunication Department
Written Examination for selection to Group 'B' post of ADSTE
(LDCE-30% Quota)
Date - 19-Feb-2017

Paper I

(Professional Subject, General Knowledge including Rajbhasa)

Time - 3 Hours

Max marks-150

1. All questions in Part "I" are compulsory. Part "I" carries total 50 Marks.
2. Part-II contains two parts i.e. Part-A & B. 3 questions each are to be answered from Part 'A' and Part 'B' under Part-II. Part-II contains total 100 marks.
3. Answer should be in brief supported by diagrams wherever necessary.
4. Answers can be written in Hindi or English language.
5. In the objective type questions, cutting, over-writing, erasing, selecting two or more options in multiple choice questions and change of any answer(s), etc is not permitted. If it is done, the evaluation of the same shall not be done.
6. In case of any dispute related to interpretation of question, English version will hold good.

PART 'I'

Q.1 Write the full form of:-

10 Marks

- (a) PRS (b) SSDAC (c) NMS (d) CRIS (e) MTRC
(f) RBI (g) GPRS (h) DESU (i) PNM (j) DRF

Q.2

10 Marks

- (i) Name any 2 S&T workshops along with their location on IR.
- (ii) Name any 2 S&T training centres for signal maintainer along with their location on IR.
- (iii) Name any 2 electric loco sheds along with their location on IR.
- (iv) Name any 2 production units alongwith their location on IR.
- (v) Name any 2 circle of Commissioner of Railway Safety along with their location.

Q.3 Fill in the blanks from the given option :-

10 Marks

- (i) Specific gravity of fully charged lead acid cell is at 27 degree centigrade.

(A) 1220 ±05	(B) 1230 ±05	(C) 1180±05	(D) 1210 ±05
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- (ii) Voltage of discharged lead acid cell isV

(A) 1.8	(B) 1.9	(C) 2.0	(D) 2.2
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- (iii) Depth of discharge permitted for flooded type lead acid cell is%.
- | | | | |
|--------|--------|--------|--------|
| (A) 80 | (B) 70 | (C) 65 | (D) 90 |
|--------|--------|--------|--------|
- (iv) Unit of measurement for 'Work' is
- | | | | |
|------------|--------|------------|-----------|
| (A) Joules | (B) HP | (C) Newton | (D) None. |
|------------|--------|------------|-----------|
- (v) At a way side station (3-4 lines) AT transformer provided is of KVA capacity.
- | | | | |
|-------|--------|--------|--------|
| (A) 5 | (B) 10 | (C) 15 | (D) 25 |
|-------|--------|--------|--------|
- (vi) Unit for measurement of 'Velocity' is
- | | | | |
|-----------|----------------|-----------------------------|----------|
| (A) Meter | (B) Meter/sec. | (C) Meter/sec. ² | (D) None |
|-----------|----------------|-----------------------------|----------|
- (vii) Working of electrical transformers is based upon principal of
- | | | | |
|------------------|------------------|----------------------|----------|
| (A) Current drop | (B) Voltage drop | (C) Mutual induction | (D) None |
|------------------|------------------|----------------------|----------|
- (viii) Optic fibre cable used on IR have generally no. Of fibres.
- | | | | |
|-------|--------|--------|--------|
| (A) 6 | (B) 12 | (C) 18 | (D) 24 |
|-------|--------|--------|--------|
- (ix) VHF set used at a way side railway station is of watt.
- | | | | |
|-------|-------|--------|--------|
| (A) 2 | (B) 5 | (C) 10 | (D) 25 |
|-------|-------|--------|--------|
- (x) Minimum rating of low voltage non-deteriorating type fuse used in signalling is Amp.
- | | | | |
|-------|-------|----------|---------|
| (A) 2 | (B) 1 | (C) 0.63 | (D) 1.6 |
|-------|-------|----------|---------|

Q.4 Write short notes on any 2 of the following:

(a) Kirchoffs current law.

(b) Ohm's law.

(c) हिन्दी में प्रवीणता एवं हिन्दी में कार्य साधक ज्ञान से आप क्या समझते हैं ?

10 Marks

Q.5. What are the 3 Newton's laws of motion. Please explain in brief.

10 Marks

OR

राजभाषा अधिनियम के अनुसार देश को कितने क्षेत्रों में विभाजित किया गया है। प्रत्येक क्षेत्र के तीन-तीन राज्यों के नाम बताएँ ?

PART-II

Part-A: Question 6 is compulsory. Total 3 questions are to be answered from this part.

Q.6 Please write short notes on any 4 of the following:-

20 Marks

(i) Essentials of interlocking.

(ii) Various classifications of accidents on IR.

- (iii) Completion certificate and Completion report.
- (iv) Various control circuits provided in RE area.
- (v) Approved Special instructions.

Q.7. Please answer any 3 of the following:- 15 Marks

- (i) What are the non-stock items and how the same are procured?
- (ii) What is Isolation and the need for provision?
- (iii) What are the requirements of train traffic control system?
- (iv) Why and where Block section limit board are provided?

Q.8 What are the important minimum signalling features for permitting train speed upto 140 KMPH? 15 Marks

Q.9. What are the Essentials of Automatic Block System on Single Line? 15 Marks

Part-B: Question 10 is compulsory. Total 3 questions are to be answered from this part.

Q.10 Please write short notes on any 4 of the following:- 20 Marks

- (i) Analog to Digital converters.
- (ii) NAND gate-symbol and Truth table.
- (iii) Railnet.
- (iv) CAT-5 cable.
- (v) Frequency and Space Diversity.

Q.11 Please answer any 3 of the following:- 15 Marks

- (i) Please indicate details of power supply arrangement at a way side OFC repeater installation?
- (ii) What is VSAT ?. Please explain functioning in brief.
- (iii) Define LAN and WAN? What are the different network topologies?
- (iv) Please explain Driver – Guard VHF communication on Indian Railway?

Q.12. What is OTDR and its principle of working? How, OTDR is used in OFC maintenance? 15 Marks

Q.13 What are the functions of Switch and Routers? 15 Marks
