ALL INDIA
BHARAT SANCHAR NIGAM LIMITED
EXECUTIVES' ASSOCIATION
Central Headquarters
New Delhi-110001

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No. AIBSNLEA/CHQ/DIR(HR)/2014   **Date: 28.01.2014**

To

    The Director (HR)
    BSNL Board,
    New Delhi-110001.

Sub: **Discrepancies in the provisional answer key of the Limited Departmental Competitive Examination held on 15.12.2013 for promotion from JTO (C) to the grade of SDE (C) : Request for removal of all such discrepancies at the earliest.**

Respected Sir,

    We would like to bring to your kind notice about the fact that the provisional answer keys uploaded on the intranet in respect of the LDCE held on 15/12/2013 for promotion to the grade of SDE (C) has many discrepancies which need to be corrected before it is used for evaluation of the answer sheets of the candidates. Whereas some questions do not have any option as correct answer at all, for some questions more than two options can be taken as correct. Besides this, some questions are very subjective and there can't be any firm answers. Furthermore, some other questions are out of syllabus. The details of all such questions are enclosed herewith as Annexure-I & II.

    You will appreciate the fact that evaluation of answer sheets of the candidates on the basis of wrong answer keys may substantially alter the result of the above said LDCE. It may result into distortion of the merit list or even leaving out some deserving candidates altogether; thereby defeating the very purpose of conducting the LDCE to give fast track promotions to the meritorious employees. In such circumstances, we shall look forward to the principles laid down by the apex court which say that merit shall not be allowed to be the casualty of wrong answer key and the correct answers shall not be sacrificed.

You are therefore requested to kindly consider the discrepancies listed in the Annexure-I & II and order immediate appropriate actions for removal of the same from the provisional answer keys before they are used for evaluation of answer sheets. You are also requested to kindly order for awarding two grace marks in Paper-1 for setting questions out of the syllabus. In case the concerned section or the question setters do not agree to all the discrepancies so pointed out, kindly refer the cases to some independent experts/ expert panels for their consideration and re-evaluation to repose faith on the administration.

As the issue is linked to the careers of a numbers of officers, no amount of mistakes shall be compromised. An early action in the matter for removal of the anomalies is, therefore, highly solicited please.

Thanking you Sir,

Encl.   : As above.   Yours Sincerely,
                                                                              -sd-
                                                                    (Prahlad Rai)
                                                                  (General Secretary)

Copy for kind information & necessary action to:

1. The PGM (BW), BSNL CO, New Delhi.
2. The GM (Rectt.), BSNL CO, New Delhi.

<u>**ANNEXURE-1**</u>

<u>**PAPER-I**</u>

(i) Question no.5 : What is the application fee for first appeal under RTI:

(A) Rs20/   (B) Rs10/   (C) Rs25/   (D) Rs50/-

The right answer is no fee for first appeal. Hence, none of the options in the question are correct. But as per RTI Act-2005 read with RTI Rule'2012, the application for seeking information shall be accompanied by a fee of rupees ten only. If the first appeal is meant by first application, it would be **rupees ten** only. If there is any right answer to this question, that would be "B" in stead of "A". **So kindly review & correct the provisional answer to "B".**

(ii)Q-9 :The compressibility of a material is proportional to : (A) Poisson's ratio (B) Modulus of elasticity (E)   (C) Reciprocal of E   (D) Reciprocal of poisons ratio.

The right answer is **reciprocal of bulk modulus** which is missing in the multiple choices. The same can be verified from the web site "en.wikipedia.org", "britannica.com" & "hyperphysics.phy-astr.gsu.edu" etc. **As none of the options in the question is correct, kindly award grace mark.**

(iii)Q-45 : Lacings are subjected to :
(A) Transverse loading.   (B) Axial loading plus bending.   (C) Axial loading plus shear force.   (D)Axial loading only.

As per the text book viz "Design of steel structures" by Sri Ram Chandra, the object of providing lateral system is to carry the **transverse shear force** which occurs when the column deflects (Copy of the page enclosed). Even in the net, *iesnotes.com* it is mentioned that lacing bars should be designed **for shear force**. (Copy enclosed). The same has also been corroborated in the **section 7.6.6.1 & 7.6.6.2 of IS 800: 2007**. In view of the above, the more appropriate answer seems to be "C". **Kindly review and correct the provisional answer to "C".**

(iv) Q-68 : For the design of retaining wall, the minimum factor of safety against overturning is taken as :
(A) 2   (B) 1.4   (C)1.5   (D)3.0

Kindly refer the section 5.3.1 of IS 13063 :1991 which says the factor of safety against sliding of structures shall not be less than 1.50 (Copy enclosed). It is stated, under section 20.1 of the IS:456:2000, that the stability against overturning shall be not less than the **sum of 1.2 times** the maximum overturning moment **due to characteristic dead load and 1.4 times** the maximum overturning moment **due to characteristic imposed load**. In cases where DL provides the restoring moment, only 0.9 times the characteristic DL shall be considered. Accordingly the text book "Design of RC structures" by Sri S. Ramamrutham has derived the factor of safety against overturning as 1.55 (Copy enclosed). Further, the text book "Reinforced Concrete structures" by Sri I.C. Syal & AK Goel has also stated that the factor of safety against overturning should be at least 1.5.

Hence it is clear that the correct answer to this question, if any, would be 1.5 not 1.4 whereas 1.4 is the factor of safety against sliding which is not the question in this case. **So kindly review & correct the provisional answer to "C".**

(v) Question no.72 : The cover of longitudinal reinforcing bar in a beam subjected to sea spray should not be less than which of the following?:

(A) 30mm (B) 70mm (C) 75mm (D) 80mm

As per IS 456:2000, the nominal cover to the reinforcements for **very severe & extreme exposures** shall not be less than 50mm & 75mm respectively and the surfaces exposed to sea water spray has been categorized therein as very severe. So the right answer is ought to be 50mm only. In absence of 50mm in the options, cover of 75mm i.e for extreme exposures is the next appropriate answer and no reduction is allowed in extreme exposure conditions. So the provisional answer i.e B (70mm) does not fit anywhere. **So kindly review & correct the answer to "C" or allow grace mark.**

(vi)Q-77 For one cum of brick masonary, the no. of modular bricks needed is:
(A) 400 or less. (B) 400 to 450 (C) 500 to 550. (D)600 to 650.

As per the Analysis of Rates (CPWD), Vol.I the no. of modular bricks needed for one cubic meter brick work is 487. None of the options are in the range of 487. **As all options are wrong, kindly award grace mark.**

(vii)Q-79 Block boards shall have solid core made up of uniform
(A) 20mm. (B) 25mm (C) 35mm. (D)50mm.

As per section 3.1 of IS 1659:2004, block board is a board having a core made up of strips of wood, not exceeding 30mm in width. So the right answer to this question is ought to be 30mm only. **As none of the options in the question is correct, kindly award grace mark.**

(viii)Q-81 All trenches------- m or more in depth shall be supplied with at least one ladder for each 30m im length or fraction thereof.
(A) 0.9m (B) 1.5m (C) 1.2m. (D)1.8m.

As per section 1.2 & 10.3 of IS 3764:1992, the right answer to this question is 1.5m only. So the answer given in the provisional answer key i.e "C" (1.2m) is wrong. **kindly review & correct the provisional answer to "B".**

(ix) Q-99 : Consider the following statements :
CPM network helps an engineer to
1. Concentrate his attention on critical activities
2. Divert the resources from non-critical advanced activities to critical activities
3. Be cautious in avoiding any delay in the critical activities in order to avoid delay in the whole project.
(A) 1 & 2 (B) 2 & 3 (C) 1 & 3 (D) 1,2 & 3
Kindly refer the text book "Building Construction" by Sri S.C. Rangawala wherein it is stated under *features of network planning* and I quote " The available resources can be diverted & utilized advantageously over the activities along the critical path for the project" that means endorsing the point(2) above (Copy enclosed).

Further, the text book "Engineering Management" by Sri R. Agor has also stated that in CPM, duration of activities can be reduced if extra resources (i.e man, machine, money) are assigned to them. The CPM's main aim is to select the jobs to be expedited and by how much (Copy of the

relevant page is enclosed). So it is clear that the right answer to this question is "D" that means all options are correct. **Kindly review & correct the provisional answer to "D".**

<u>**ANNEXURE-II**</u>

<u>**PAPER-II**</u>

(i) Question no.1 : Porosity in a given soil sample is defined as:
(A) Ratio of total volume of voids to the volume of soil solids.

(B) Ratio of total volume of voids to total volume of soil sample.

(C) Ratio of total volume of water to the volume of soil sample.

(D) Ratio of total volume of air to the volume of soil sample.

The right answer is "B" which can be verified from the text books like "Soil Mechanics and Foundation" by Dr. B.C. Punmia (Copy enclosed). **So kindly review the provisional answer "A" & correct it to "B".**

(ii)Q-2 : Degree of saturation in a given soil sample is defined as:

(A) Ratio of total volume of water to the volume of soil.

(B) Ratio of total mass of water to total mass of soil.

(C) Ratio of total volume of water to total volume of voids.

(D) Ratio of total weight of water to total weight of soil.

The right answer is "C" which can be verified from the text books like "Soil Mechanics and Foundation" by Dr. B.C. Punmia (Copy enclosed). **So kindly review the provisional answer "B" & correct it to "C".**

(iii)Question no. 9 & 10 are related to the "shear strength" subject matter of soil mechanics and thus out of syllabus which is clear from the scheme & syllabus circulated for this LDCE by the DGM(BW-I), O/o the PGM(BW), CO, New Delhi vide Lr. No. LDCE/AD(BW-II)/05/Pt Dtd 12/01/2011.

The syllabus of soil mechanics, as circulated vide above letter, is reproduced below for ready reference:

4. Soil Mechanics and foundation engineering.

i) Index properties of soil, classification, soil explorations

ii) Foundation engineering: principles of selection of types of foundation for a structure, shallow & deep foundations, methods of determining bearing capacity.

iii) Compaction : Laboratory & field method, optimum moisture content, settlement/ consolidation.

iv) Foundation on expansive soils, types of piles: their design & layout.

In view of above, it is requested to grant 2 grace marks.

(iv) Q-12 : Safe bearing capacity of soil is :

(A) The maximum load intensity at the base of footing to which soil can carry safely, with a factor of safety, without risk of shear failure.

(B) The maximum load intensity at the base of footing to which soil can carry within permissible settlement of footing.

(C) The maximum load intensity at the base of footing to which soil can carry safely without risk of shear failure and within permissible settlement limit of footing.

(D) The minimum load intensity at the base of footing to which soil can carry safely without risk of shear failure and within permissible settlement limit of footing.

I would like to quote the definition of safe bearing capacity given in IS 6403:1981(copy enclosed) and it is **" maximum intensity of loading that the foundation will safely carry without the risk of shear failure of soil irrespective of any settlement that may occur".** This definition is mostly matching with the option "C" above.

Furthermore, consider the definitions given in the text book like "Soil Mechanics and Foundation" by Dr. B.C. Punmia (Copies of relevant pages enclosed). It speaks the same thing and also states that **safe bearing capacity is equal to the net safe bearing capacity plus original overburden pressure**. Again net safe bearing capacity is related to net ultimate bearing

capacity which is the **minimum net pressure intensity** (not maximum load intensity as is given in option "A") **causing shear failure of soil** (not the soil carrying safely as is given in option "A"). Additionally it describes that sometimes, the **safe bearing capacity is also referred to as ultimate bearing capacity divided by a factor of safety**. It is worthwhile to mention that **ultimate bearing capacity is not the maximum load intensity the soil can carry safely** (as is said in option "A") **but it is the minimum gross pressure intensity at which the soil fails in shear**. The study material given by ALTTC, Ghaziabad during up-gradation course for E2 to E3 (Rev date 10-03-2008) also describes the issue in the above manner.

When it is stated that the maximum load the soil can carry **safely**, again applying a factor of safety is not comprehensible and also not considered in IS 6403. **In view of above, kindly review the provisional answer and correct it to the option "C"**

(v) Q-14 : Allowable bearing pressure of soil is :
> (A) The maximum load intensity at the base of footing to which soil can carry safely, with a factor of safety, without risk of shear failure.
> (B) The maximum load intensity at the base of footing to which soil can carry within permissible settlement of footing.
> (C) The maximum load intensity at the base of footing to which soil can carry safely without risk of shear failure and within permissible settlement limit of footing.
> (D) The minimum load intensity at the base of footing to which soil can carry safely without risk of shear failure and within permissible settlement limit of footing.

Allowable bearing pressure as described in the text book "Soil Mechanics and Foundation" by Dr. B.C. Punmia (Copies of relevant pages enclosed above), the study material given by ALTTC, Ghaziabad during up-gradation course for E2 to E3 (Rev date 10-03-2008) and also by IS 6403:1981(copy enclosed above) is as below:
" It is the net intensity of loading at which neither the soil fails nor there is excessive settlement detrimental to the structure". It is worthwhile to mention that net loading intensity s not the maximum or minimum loading intensity but is the difference in intensities between the gross pressure after construction of the structure and the original overburden pressure. This definition is missing in all the options. **As none of the options are correct, kindly allow grace mark.**

(vi)Q-77 :In highways or Railways, which of the following is not correct:-
(A) Degree of curvature is central angle of the curve subtended by an ars of 20metre length.
(B) Degree of curvature is central angle of the curve subtended by a chord of 20metre length.
(C) Higher the degree of curvature more is the permissible speed of moving traffic on the curve.
(D)Sharpness of the curve is designated by its degree of curvature.

All the options except "D" are correct answers to this question. Kindly refer the text book "Railway engineering" by Rangwala where it is stated that the degree of curve is the angle subtended at the centre by a chord of 30m length (Copy enclosed). Also refer the text book

"Surveying" by Hussain & Nagaraj , the same definition is given (Copy enclosed). The website of ministry of Railways, Govt. of India (www.indianraiways.gov.in/railwayboard/uploads/codesmanual also states the same thing (copy enclosed). The website www.mhe.com and www.globalsecurity.org both have stated that degree of curvature may be defined in two ways. **The arc definition is the angle subtended by a 100ft arc. The chord definition is the angle subtended by a 100ft chord.** So 20m arc or chord does not fit in the definition of degree of curvature. As such option "A" & "B", not being correct themselves, are the right answers to this question along with "C". **So kindly review the provisional answer only "C" & correct it to "A", "B" and "C".**

(vii)Q-86 :As per IRC the safe stopping sight distance for the design speed of vehicles as 100km/hr is:-
(A) 90metre   (B) 120metre   (C) 180metre   (D) 220metre

Kindly find enclosed herewith IRC 73:1980 and IRC 66-1976 wherein it is stated that the safe SSD for speed limit of 100 kmph is 180m (copies enclosed). Furthermore, the text books like "Traffic engineering & transport planning" by Dr. L.K.Kadiyali also endorses the same figure of 180kmph. **So kindly review the provisional answer "B" & correct it to "C".**

As far as questions having no firm/unique answers are concerned, question no.10, 62 are falling in this category for which grace marks shall be allowed.