

## DATA CAPTURING MANUAL FOR DISTRICT MIS COORDINATOR

Data Capture, Extraction, Generating '.csv' files from NAS OMR Sheets–  
Achievement Tests ('at'), Questionnaires (Pupil-'pq', Teacher-'tq' and School-'sq')

### 1. Key points to check, while procurement of OMR data capturing software and scanning device

The solution should comprise of OMR software and ADF scanner (support 300 dpi scanning) that will ensure successful processing of NAS Class X (Cycle 2) OMR sheets.

Key features of solution should be:

- Completely customized to automatically configure and process OMR sheets (as per OMR design provided by NCERT) of Achievement Tests and Questionnaires– Pupil (PQ), Teacher (TQ) and School (SQ).
- The solution should have been successfully used to process OMR sheets in educational surveys.
- Should provide automatic error detection and correction module.
- Software should process minimum 300-500 OMR sheets in a minute.
- Software should be integrated with Scanner SDK.
- Should have in-built Microsoft Excel based OMR Form designer.
- Should allow automatic creation of output '.csv' file 100% compatible with NCERT's NAS Class X Web Application.
- Should follow '.csv' templates available on NAS Class X Web Application (can be downloaded).

**You may also look (optional):**

- Preferably have facility for automatic creation of Customized District Level Report (as per template of District Report Card shared with States/UTs by NCERT).
- Should have capability of completion of data processing/data verification/data upload/Report creation at District level within a week time, based on the coverage of NAS Class X (Cycle 2).

**NOTE: Share this manual with your OMR scanning vendor/firm just after procurement of software and scanning device.**

## 2. OMR Sheet Design

- Achievement Test, PQ, TQ and SQ OMRs design will be provided by NCERT for NAS Class X (Cycle 2) tools administration.
- There are total 4 designs of OMR sheets as below:
  - 1 OMR sheet for Achievement Test
  - 1 OMR sheet for PQ
  - 1 OMR sheet for TQ
  - 1 OMR sheet for SQ
- You MUST follow the design provided by NCERT, while preparing the OMR sheets (Any change/modification will lead to invalid data).

## 3. OMR Sheet Printing

- You have to get the NAS Class X (Cycle 2) OMR sheets printed as per the design provided at Annexure in Guideline Manual.
- Following points should be taken care of while printing these OMR sheets:
  - To be printed on **100 gsm, A4 paper size**.
  - Print quality should be good, faded printing may result in distorted results.

## 4. Filling up of OMR Sheet

- Use only blue/black ball point pen to fill OMR sheet.
- Ensure not to leave blank any field/column in the OMR sheet.
- Please fill the full circle/bubble for responding to each question.
- Do not put any ink marks on the circular registration marks printed at the border of the OMR sheet.
- Do not allow students to alter/change/overwrite responses, once marked.

## 5. Naming FOLDERS and FILES for Achievement Tests

- **Make master folder name by using UDISE code as below:**

E.g.: If the state is Madhya Pradesh and district name is Bhopal then use first four digits from left of UDISE code. In this, first two digits from left represent State and next two digits for district. As per UDISE code first two digits from left for Madhya Pradesh are '23' and next two for Bhopal it is '32' so the master folder name for Bhopal district is– '2332'.

- **Inside the master folders make four sub folders for 'at', 'pq', 'tq' and 'sq' as–**

'at' (under folder '2332')

'pq' (under folder '2332')

'tq' (under folder '2332')

'sq' (under folder '2332')

- **Scan Language, Mathematics, Science, Social Science and MIL subjects OMR sheets together and make one '.csv' file and place in respective folder.**

*Eg., in case of Bhopal district of Madhya Pradesh the '.csv' file name for achievement test as below:*

2332\_at.csv (under folder 'at')

- **Scan PQ, TQ and SQ separately and make their three separate '.csv' files and place them in their respective folders.**

*Eg., in case of Bhopal district of Madhya Pradesh the '.csv' files names are as below:*

'2332\_pq.csv' (under folder 'pq')

'2332\_tq.csv' (under folder 'tq')

'2332\_sq.csv' (under folder 'sq')

**Note:** '.csv' files for NAS Class X (Cycle 2) of a district MUST follow the above folder and file formats to avoid any invalid entries on the NAS Class X Web Application.

## 6. OMR Sheet Scanning and Processing of data

- Instruct vendor/firm from which the scanning device and software are procured to follow the instructions mentioned in this manual.
- Download the '.csv' templates (achievement test, PQ, TQ and SQ) from the NAS Class X Web Application and hand over the same to the vendor/firm well-before starting the OMR scanning process.
- Instruct vendor/firm to strictly follow data structure for generating '.csv' files.

## 7. Generating '.csv' file from Achievement Tests OMR sheets

Once the data is processed, the next step is generating '.csv' file for uploading on the NAS Class X Web Application. The '.csv' file must be in the following field order, field name, field type, field length and possible values as mentioned below:

### Data structure for generating '.csv' files for Achievement Test ('at')

Column order	Variable name	Field type	Field Width	Valid Values	Field Validation	Value label
A	UDISE	numeric	11		<b>Mandatory</b>	
B	Section	character	1	A to J	<b>Optional</b> *In case of filled-in OMR, this field received blank or has multiple responses then the field should be treated as no response (blank in '.csv' file)	
C	Student_ID	numeric	2	01 to 99	<b>Mandatory</b>	
D	Aadhaar	numeric	12		<b>Optional</b> *In case of filled-in OMR, this field received blank or has multiple responses then the field should be treated as no response (blank in '.csv' file)	Leave blank for no response
E	Medium	numeric	2	01 to 16	<b>Mandatory</b>	Assamese-01; Bangla-02; English-03; Gujarati-04; Hindi-05; Kannada-06; Malayalam-07; Manipuri-08; Marathi-09; Mizo-10; Odiya-11; Punjabi-12; Tamil-13; Telugu-14; Urdu-15; Bodo-16
F	Test_Form	numeric	2	11,12,13 21,22,23 31,32,33 41,42,43 51,52,53	<b>Mandatory</b>	<b>Language</b> (11,12,13) <b>Mathematics</b> (21,22,23) <b>Science</b> (31,32,33) <b>Social Science</b> (41,42,43) <b>MIL</b> (51,52,53)

Column order	Variable name	Field type	Field Width	Valid Values	Field Validation	Value label
G	Gender	numeric	1	1, 2, 3	<b>Mandatory</b>	Boy-1; Girl-2; Other-3
H	Social_Group	numeric	1	1 to 4	<b>Mandatory</b>	SC-1; ST-2; OBC-3; Other-4
I	CWSN	numeric	1	1 to 7	<b>Optional</b> *In case of filled-in OMR, this field received blank or has multiple responses then the field should be treated as no response (blank in '.csv' file)	None-1; LD-2; VI-3; HI-4; S&LD-5; ID-6; OthD-7
J	Area	numeric	1	1 to 2	<b>Mandatory</b>	Rural-1; Urban-2
K	School_Management	numeric	1	1 to 3	<b>Mandatory</b> *In case of filled-in OMR, this field received blank or has multiple responses then the field should be treated as no response (blank in '.csv' file)	Govt.-1; Aided-2; Private-3
<b>Student's Responses</b>						
L to BS	Question1 to Question60	numeric	1	1 to 4, 8, 9	<b>Mandatory</b>	1 to 4 are options; '8' for <b>multiple response</b> and '9' for <b>no response</b> )

### Data structure for generating '.csv' files for Pupil Questionnaire ('pq')

Column order	Variable name	Field type	Field Width	Valid Values
A	UDISE	numeric	11	
B	Section	character	1	A to J
C	Student_ID	numeric	2	01 to 99
<b>Student's Responses</b>				
<b>Note:</b> (i) Field validation for all the questions and Column order A to C are Mandatory. (ii) Standing instruction for all questions—Multiple Response-8 and No Response-9				
D	Question1	numeric	1	1,2,3

Column order	Variable name	Field type	Field Width	Valid Values
E	Question2	numeric	1	1,2,3
F	Question3	numeric	1	1,2,3,4
G	Question4	numeric	1	1,2
H	Question5	numeric	1	1,2,3,4,5
I	Question6	numeric	1	1,2,3,4,5
J	Question7	numeric	1	1,2,3,4,5,6,7
K	Question8	numeric	1	1,2,3,4,5,6,7
L	Question9a	numeric	1	1,2
M	Question9b	numeric	1	1,2
N	Question9c	numeric	1	1,2
O	Question9d	numeric	1	1,2
P	Question9e	numeric	1	1,2
Q	Question9f	numeric	1	1,2
R	Question10a	numeric	1	1,2,3
S	Question10b	numeric	1	1,2,3
T	Question10c	numeric	1	1,2,3
U	Question11	numeric	1	1,2,3
V	Question12	numeric	1	1,2,3,4,5
W	Question13a	numeric	1	1,2
X	Question13b	numeric	1	1,2
Y	Question13c	numeric	1	1,2
Z	Question13d	numeric	1	1,2
AA	Question13e	numeric	1	1,2
AB	Question13f	numeric	1	1,2
AC	Question13g	numeric	1	1,2
AD	Question13h	numeric	1	1,2
AE	Question14	numeric	1	1,2
AF	Question15	numeric	1	1,2
AG	Question16	numeric	1	1,2
AH	Question17	numeric	1	1,2
AI	Question18	numeric	1	1,2

Column order	Variable name	Field type	Field Width	Valid Values
AJ	Question19	numeric	1	1,2
AK	Question20a	numeric	1	1,2,3
AL	Question20b	numeric	1	1,2,3
AM	Question20c	numeric	1	1,2,3
AN	Question20d	numeric	1	1,2,3
AO	Question20e	numeric	1	1,2,3
AP	Question21a	numeric	1	1,2
AQ	Question21b	numeric	1	1,2
AR	Question21c	numeric	1	1,2
AS	Question21d	numeric	1	1,2
AT	Question22a	numeric	1	1,2,3,4
AU	Question22b	numeric	1	1,2,3,4
AV	Question22c	numeric	1	1,2,3,4
AW	Question22d	numeric	1	1,2,3,4
AX	Question23a	numeric	1	1,2,3,4
AY	Question23b	numeric	1	1,2,3,4
AZ	Question23c	numeric	1	1,2,3,4
BA	Question24a	numeric	1	1,2,3,4
BB	Question24b	numeric	1	1,2,3,4
BC	Question24c	numeric	1	1,2,3,4
BD	Question24d	numeric	1	1,2,3,4
BE	Question25a	numeric	1	1,2,3,4
BF	Question25b	numeric	1	1,2,3,4
BG	Question25c	numeric	1	1,2,3,4
BH	Question25d	numeric	1	1,2,3,4
BI	Question25e	numeric	1	1,2,3,4
BJ	Question25f	numeric	1	1,2,3,4
BK	Question26a	numeric	1	1,2,3
BL	Question26b	numeric	1	1,2,3
BM	Question26c	numeric	1	1,2,3
BN	Question26d	numeric	1	1,2,3

Column order	Variable name	Field type	Field Width	Valid Values
BO	Question26e	numeric	1	1,2,3
BP	Question26f	numeric	1	1,2,3

### Data structure for generating '.csv' files for Teacher Questionnaire ('tq')

Column order	Variable name	Field type	Field Width	Valid Values
A	UDISE	numeric	11	
B	Section	character	1	A to J
C	Teacher_Code	numeric	1	1,2,3,4,5,6
<b>Teacher's Responses</b>				
<b>Note:</b> (i) Field validation for all the questions and Column order A to E are Mandatory.				
(ii) Standing instruction for all questions—Multiple Response-8 and No Response-9				
D	Question1	numeric	1	1,2,3
E	Question2	numeric	1	1,2,3,4
F	Question3	numeric	1	1,2,3,4
G	Question4	numeric	1	1,2,3,4,5
H	Question5	numeric	1	1,2,3
I	Question6	numeric	1	1,2
J	Question7	numeric	1	1,2,3
K	Question8	numeric	1	1,2,3
L	Question9a	numeric	1	1,2
M	Question9b	numeric	1	1,2
N	Question9c	numeric	1	1,2
O	Question9d	numeric	1	1,2
P	Question9e	numeric	1	1,2
Q	Question10a	numeric	1	1,2,3
R	Question10b	numeric	1	1,2,3
S	Question10c	numeric	1	1,2,3
T	Question10d	numeric	1	1,2,3
U	Question10e	numeric	1	1,2,3
V	Question10f	numeric	1	1,2,3
W	Question11a	numeric	1	1,2,3,4



Column order	Variable name	Field type	Field Width	Valid Values
X	Question11b	numeric	1	1,2,3,4
Y	Question11c	numeric	1	1,2,3,4
Z	Question11d	numeric	1	1,2,3,4
AA	Question11e	numeric	1	1,2,3,4
AB	Question11f	numeric	1	1,2,3,4
AC	Question11g	numeric	1	1,2,3,4
AD	Question11h	numeric	1	1,2,3,4
AE	Question12a	numeric	1	1,2,3,4
AF	Question12b	numeric	1	1,2,3,4
AG	Question12c	numeric	1	1,2,3,4
AH	Question12d	numeric	1	1,2,3,4
AI	Question12e	numeric	1	1,2,3,4
AJ	Question12f	numeric	1	1,2,3,4
AK	Question13a	numeric	1	1,2,3
AL	Question13b	numeric	1	1,2,3
AM	Question13c	numeric	1	1,2,3
AN	Question13d	numeric	1	1,2,3
AO	Question13e	numeric	1	1,2,3
AP	Question14a	numeric	1	1,2,3
AQ	Question14b	numeric	1	1,2,3
AR	Question14c	numeric	1	1,2,3
AS	Question14d	numeric	1	1,2,3
AT	Question14e	numeric	1	1,2,3
AU	Question14f	numeric	1	1,2,3
AV	Question14g	numeric	1	1,2,3
AW	Question15a	numeric	1	1,2,3
AX	Question15b	numeric	1	1,2,3
AY	Question15c	numeric	1	1,2,3
AZ	Question15d	numeric	1	1,2,3
BA	Question15e	numeric	1	1,2,3
BB	Question15f	numeric	1	1,2,3

Column order	Variable name	Field type	Field Width	Valid Values
BC	Question15g	numeric	1	1,2,3
BD	Question15h	numeric	1	1,2,3
BE	Question16a	numeric	1	1,2,3
BF	Question16b	numeric	1	1,2,3
BG	Question16c	numeric	1	1,2,3
BH	Question16d	numeric	1	1,2,3
BI	Question16e	numeric	1	1,2,3
BJ	Question16f	numeric	1	1,2,3

### Data structure for generating '.csv' files for School Questionnaire ('sq')

Column order	Variable name	Field type	Field Width	Valid Values
A	UDISE	numeric	11	
B	Total_Sections	numeric	2	01-99
C	Enrollment_all_sections_Class_X	numeric	3	001-999
D	Enrollment_selected_section	numeric	3	001-999
E	Absentees_selected_section	numeric	2	01-99
<b>Head Teacher's Responses</b>				
<b>Note: (i) Field validation for all the questions and Column order A to E are Mandatory.</b>				
<b>(ii) Standing instruction for all questions—Multiple Response-8 and No Response-9</b>				
F	Question1	numeric	1	1,2
G	Question2	numeric	1	1,2,3
H	Question3	numeric	1	1,2,3
I	Question4a	numeric	1	1,2
J	Question4b	numeric	1	1,2
K	Question4c	numeric	1	1,2
L	Question4d	numeric	1	1,2
M	Question4e	numeric	1	1,2
N	Question5a	numeric	1	1,2
O	Question5b	numeric	1	1,2
P	Question5c	numeric	1	1,2
Q	Question5d	numeric	1	1,2

Column order	Variable name	Field type	Field Width	Valid Values
R	Question5e	numeric	1	1,2
S	Question5f	numeric	1	1,2
T	Question5g	numeric	1	1,2
U	Question5h	numeric	1	1,2
V	Question6a	numeric	1	1,2
W	Question6b	numeric	1	1,2
X	Question6c	numeric	1	1,2
Y	Question6d	numeric	1	1,2
Z	Question6e	numeric	1	1,2
AA	Question6f	numeric	1	1,2
AB	Question6g	numeric	1	1,2
AC	Question6h	numeric	1	1,2
AD	Question6i	numeric	1	1,2
AE	Question6j	numeric	1	1,2
AF	Question7a	numeric	1	1,2,3
AG	Question7b	numeric	1	1,2,3
AH	Question7c	numeric	1	1,2,3
AI	Question7d	numeric	1	1,2,3
AJ	Question7e	numeric	1	1,2,3
AK	Question7f	numeric	1	1,2,3
AL	Question7g	numeric	1	1,2,3
AM	Question7h	numeric	1	1,2,3
AN	Question7i	numeric	1	1,2,3
AO	Question7j	numeric	1	1,2,3
AP	Question7k	numeric	1	1,2,3
AQ	Question8a	numeric	1	1,2,3
AR	Question8b	numeric	1	1,2,3
AS	Question8c	numeric	1	1,2,3
AT	Question8d	numeric	1	1,2,3
AU	Question8e	numeric	1	1,2,3
AV	Question8f	numeric	1	1,2,3

Column order	Variable name	Field type	Field Width	Valid Values
AW	Question8g	numeric	1	1,2,3
AX	Question8h	numeric	1	1,2,3
AY	Question8i	numeric	1	1,2,3
AZ	Question8j	numeric	1	1,2,3
BA	Question8k	numeric	1	1,2,3
BB	Question9a	numeric	1	1,2
BC	Question9b	numeric	1	1,2
BD	Question9c	numeric	1	1,2
BE	Question9d	numeric	1	1,2
BF	Question10a	numeric	1	1,2,3
BG	Question10b	numeric	1	1,2,3
BH	Question10c	numeric	1	1,2,3
BI	Question10d	numeric	1	1,2,3
BJ	Question10e	numeric	1	1,2,3
BK	Question10f	numeric	1	1,2,3
BL	Question10g	numeric	1	1,2,3
BM	Question10h	numeric	1	1,2,3
BN	Question10i	numeric	1	1,2,3
BO	Question10j	numeric	1	1,2,3

## 8. Uploading '.csv' files on NAS Class X Web Application

Upload '.csv' file to NCERT's NAS Class X Web Application (follow upload instructions as stated in NAS Class X Web Application Manual)

## 9. Report Generation

Generate District Report Card after '.csv' file uploading from NAS Class X Web Application (follow instructions as stated in NAS Class X Web Application Manual)