वेवलेंथ पर 21 मिनट तक यूवी प्रकाश में रखा जाएगा। इसके तत्काल बाद, स्याही आसंजन हेतु विजुअल वैयक्तीकीकरण परीक्षण किया जाएगा। परीक्षण में नमूने द्वारा ग्रेड 2 अथवा ग्रेड 1 दर्शाया जाएगा।

(ङ.) **भण्डारण और परतीकरण** – जब विजुअल वैयक्तीकीकृत कार्डों को 5 कार्डों के ढेर में रखा जाता है तथा ऊपर से 1.5 किलोग्राम निवल भार डाले जाने और 2 दिन तक 40 ± 3°से., 80 प्रतिशत सापेक्ष आर्द्रता पर रखे जाने पर कार्ड की सतह पर मुद्रण पर कोई प्रतिकूल प्रभाव नहीं पड़ना चाहिए अर्थात इसका रंग नहीं उड़ना चाहिए अथवा नजदीकी कार्डों तक रंग अंतरण नहीं होना चाहिए। इस परीक्षण के उपरांत कार्डों की स्याही आसंजन जांच की जाएगी। परीक्षण नमूने में ग्रेड-1 गुणवत्ता दर्शाई जाएगी।

[फा. सं. आरटी-11028/24/2016-एमवीएल]

प्रियांक भारती, संयुक्त सचिव

नोट : प्रमुख नियम, अधिसूचना संख्या सा.का.नि. 590(अ) तारीख 2 जून, 1989 द्वारा और अंतिम संशोधन अधिसूचना सा.का.नि. 1225(अ) तारीख 20 दिसम्बर, 2018 द्वारा भारत के राजपत्र, असाधारण, भाग-II, खंड 3, उप-खंड (i) में प्रकाशित किया गया था।

MINISTRY OF ROAD TRANSPORT AND HIGHWAYS

NOTIFICATION

New Delhi, the 1st March, 2019

G.S.R. 174(E).—Whereas the draft of certain rules further to amend the Central Motor Vehicles Rules, 1989, were published, as required under sub-section (1) of section 212 of the Motor Vehicles Act, 1988 (59 of 1988), *vide* notification of the Government of India in the Ministry of Road Transport and Highways number G.S.R. 1073(E), dated the 30th October, 2018 in the Gazette of India, Extraordinary, Part II, Section 3, Sub-section (i), inviting objections and suggestions from affected persons before the expiry of the period of thirty days from the date on which copies of the Gazette containing the said notification were made available to public;

Whereas, copies of the said Gazette notification were made available to the public on the 30th October, 2018;

And whereas, the objections and suggestions received from the public in respect of the said draft rules have been duly considered by the Central Government;

Now, therefore, in exercise of the powers conferred by section 27 and section 64 of the Motor Vehicles Act, 1988 (59 of 1988), the Central Government hereby makes the following rules further to amend the Central Motor Vehicles Rules, 1989, namely: —

1. **Short title and commencement.** - (1) These rules may be called the Central Motor Vehicles (Second Amendment) Rules, 2019.

(2) They shall come into force on the 1st day of October, 2019.

2. In the Central Motor Vehicles Rules, 1989,-

(a) in rule 16, –

(i) in sub-rule (1), for the word and figure "Form 6", the following shall be substituted, namely:-

"in form of a laminated card type without a chip or Smart Card type in Form 7 conforming to the specifications stipulated in Annexure XI";

(ii) in sub-rule (2), for the words "laminated card type or Smart Card type driving license, such", the following words shall be substituted, namely:-

"Smart Card type driving license, such";

(iii) sub-rule (3) shall be omitted;

(b) in rule 18, in sub-rule(1) for 'clause (b)', the following 'clause' shall be substituted, namely: -

"(b) applicant's recent passport size photograph,";

(c) in rule 32, in the 'Note', for 'clause 1', the following 'clause' shall be substituted, namely: -

"1. Where a laminated card without chip or Smart Card type driving licence is issued in Form 7, an additional fee of two hundred rupees shall be levied.";

(d) in rule 48, for the words and figures "Form 23 or Form 23A", the following words and figures shall be substituted, namely:-

"Form 23A conforming to the specifications stipulated in Annexure XI";

(e) in rule 81, for 'Note 2', the following 'Note' shall be substituted, namely: -

"Note 2. Where the certificate of registration issued is in the form of laminated card without chip or Smart Card type driving licence, an additional fee of two hundred rupees shall be charged except in the case of issue of fresh certificate of registration after cancellation of hire purchase or lease or hypothecation agreement.";

(f) the "FORM 6" shall be omitted;

(j) for 'FORM 7', the following 'Form' shall be substituted, namely:-

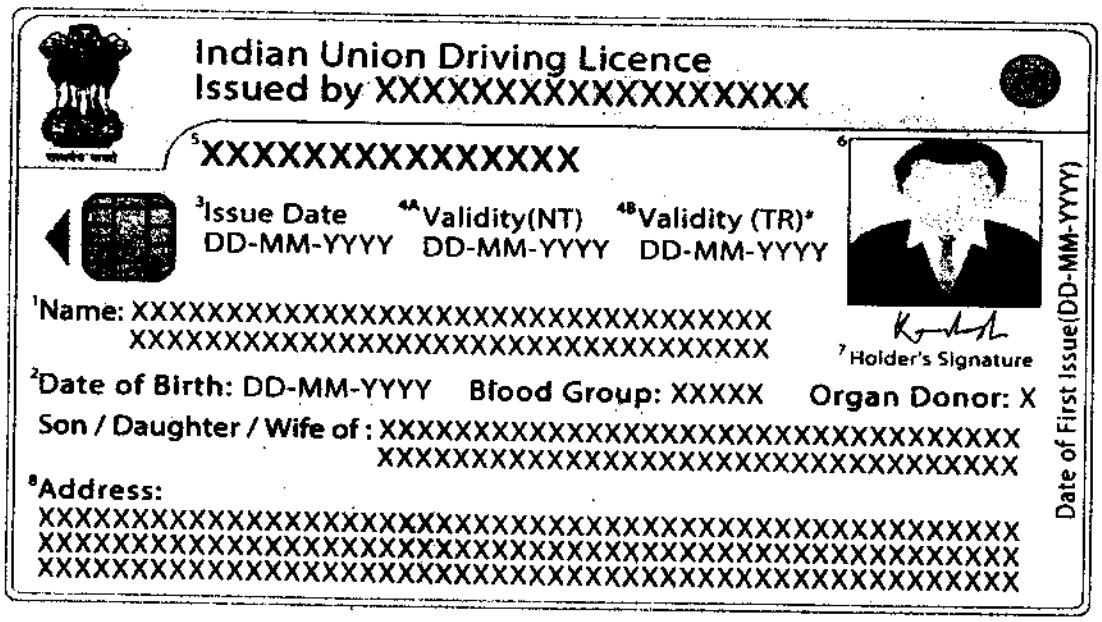
"FORM 7

[(See rule 16 (1) and (2)]

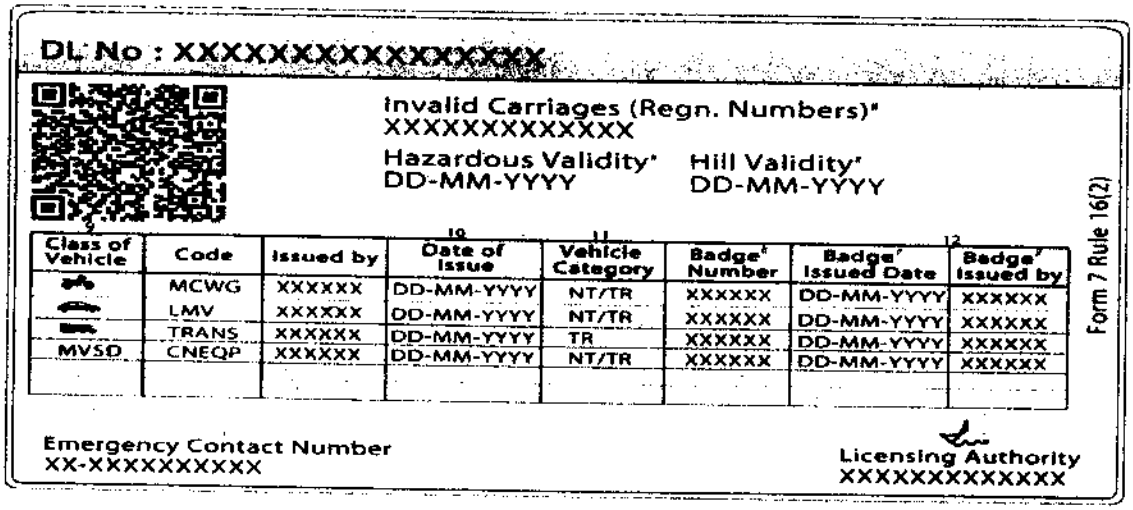
FORM FOR DRIVING LICENCE (LAMINATED CARD WITHOUT CHIP OR SMART CARD)

VISUAL INSPECTION ZONE

A. The design of the card on the front side shall include the following data fields in visual form -

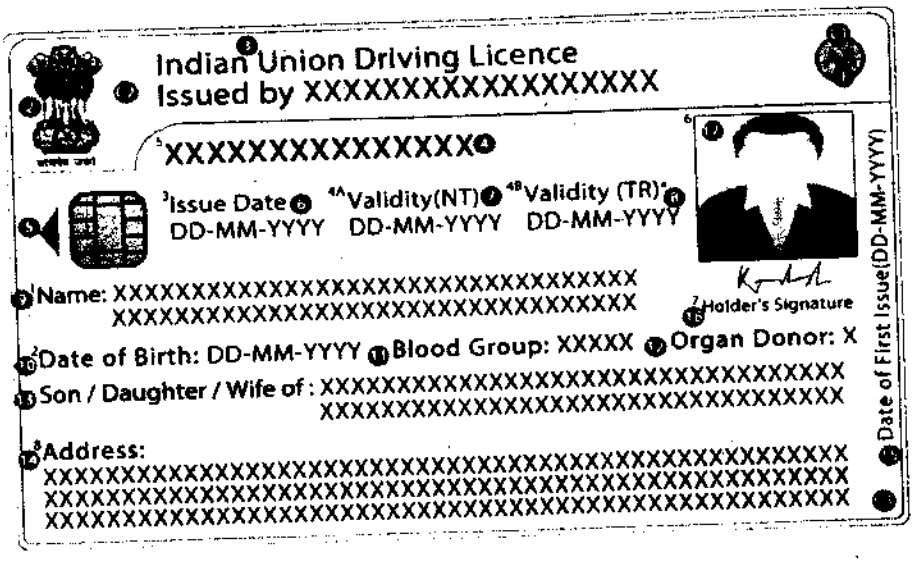


B. The design of the card on the reverse side shall include the following data fields in visual form -

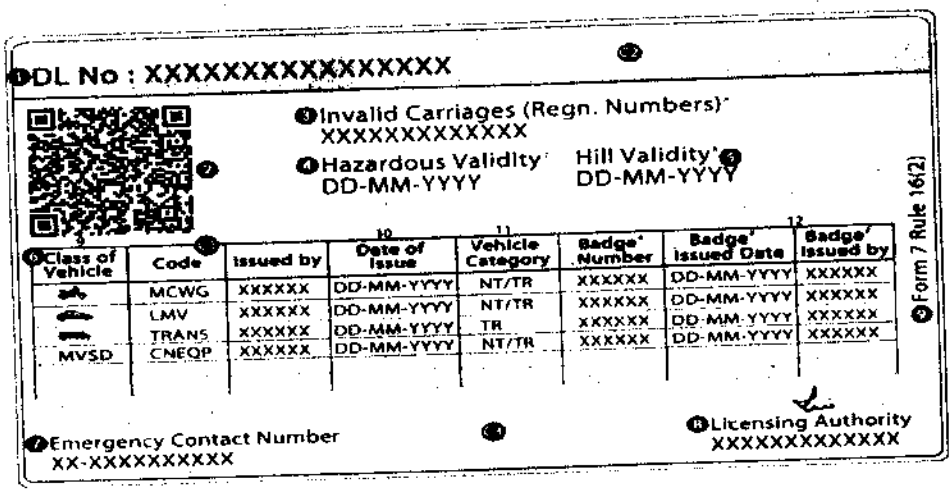


details of the features on the card shall be as under, namely:-

A. For front side:



B. For reverse side



...ions.-

...ze - 85.6mm x 54.02 mm +/- 2 mm; Thickness minimum 0.7 mm

(i) Card in the form of either laminated card type without chip; or

as per the defined template in the form of ICC (Integrated Circuit Card) compliant to ISO/IEC 7816-Part 1, 2, 3, 4, 8 and 9, IS16695 (Part 1: 2018) Smart Card Template Architecture Part 1: Basic Command Set (commonly known as SCOSTA Contact Smart Card);

(ii) PICC (Proximity Integrated Circuit Card), if provided, compliant to ISO/IEC 14443- Part 1, 2 3 and 4, ISO/IEC 7816-Part 4, 8 and 9, IS16695 (Part 1: 2018) Smart Card Template Architecture Part 1: Basic Command Set (commonly known as SCOSTA Contactless Smart Card), with card dimensions compliant to ISO/IEC 7810 ID-1 standard.

(b) Font Style and Size specifications

Front Side				Reverse Side			
Sr. No.	Features	Font Name	Size	Sr. No.	Features	Font Name	Size
1.	State/UT Code	Myriad Pro Regular	7pt	1.	Driving Licence Number	Myriad Pro Bold	8pt
2.	National Emblem	Symbol	7.37mm x 12.28mm	2.	QR code (As specified by Central Government)	NA	15mm x 15mm
3.	Card Header	Myriad Pro Bold	9pt	3.	Invalid Carriage# (Regn. Numbers)	Myriad Pro Regular	7pt
4.	Driving Licence Number	Myriad Pro Bold	9pt	4.	Hazardous Validity#	Myriad Pro Regular	7pt
5.	IC Chip (if opted for)	NA	NA	5.	Hill Validity#	Myriad Pro Regular	7pt
6.	Issue Date	Myriad Pro Regular	7pt	6.	Vehicle class table (Class of Vehicle, Code, Issued by, Date of Issue, Vehicle Category, Badge Number#, Badge Issued Date# , Badge Issued by#)	Myriad Pro Regular	5pt
7.	Validity (NT)	Myriad Pro Regular	7pt	7.	Emergency Contact Number	Myriad Pro Regular	6pt
8.	Validity(TR)#	Myriad Pro Regular	7pt	8.	Licensing Authority	Myriad Pro Regular	6pt
9.	Name	Myriad Pro Regular	7pt	9.	Form 7 Rule 16(2)	Myriad Pro Regular	6pt
10.	Date of Birth	Myriad Pro Regular	7pt				
11.	Blood Group	Myriad Pro Regular	7pt				
12.	Organ Donor	Myriad Pro Regular	7pt				
13.	Son/Daughter/ Wife of	Myriad Pro Regular	7pt				
14.	Address	Myriad Pro Regular	7pt				
15.	Date of First Issue	Myriad Pro Regular	6pt				
16.	Holder's Signature	Myriad Pro Regular	5pt				
17.	Photograph	NA	14.82 mm x 14.82 mm				

: Both Label and Value would be blank in cases where they are not applicable or have not been opted for

Details					
Front Side			Reverse Side		
Code	Print colour		Sr. No.	Hex Code	Print colour
#f8951d	C: 0 M: 49 Y: 100 K:0		C1.	#ddf1fa	C:12 M: 1 Y:1 K:0
Gradient Color Top: #e7f5f5 Bottom:#a3daf7	Gradient Color Top:C:8 M: 0 Y:3 K:0 Bottom:C:33 M:1 Y:0 K:0		C2.	Gradient Colour Top: #e7f5f5 Bottom:#a3daf7	Gradient Colour Top: C:8 M: 0 Y:3 K:0 Bottom:C:33 M:1 Y:0 K:0
#edf8fc	C:6 M: 0 Y:1 K:0		C3.	#edf8fc	C:6 M: 0 Y:1 K:0

MACHINE READABLE ZONE *(applicable only if opted for Smart Card)*

The concerned State Governments shall provide the following features of the licence in the Machine Readable Zone, namely:-

Sr. No.	Field
1.	**DL Holder Personal Details :**
	Driving Licence Number (DL)
	Name of the DL Holder
	Full Name of the DL Holder
	Gender
	Guardian(Mother/Father/Husband) Name
	Relation with Guardian (e.g.: S/o, W/o , D/o)
	Date of Birth (in ddmmyyyy format)
	First Identification Mark
	Second Identification Mark
	Blood Group
	Mobile Number
	Email Id
	Alternate Mobile Number
	Emergency Contact Number
	Permanent Address
	PINCODE of Permanent Address
	State Code In Permanent Address
	District Name in Permanent Address
	Sub-division/Taluk name in Permanent Address
	Village Name in Permanent address
	Present Address
	State Code in Present address
	PINCODE of Present address
	District Name in present Address
	Sub-division/Taluk Name in present Address
	Village Name in Present address
2.	**Licence details :**
	Valid From (Transport) (in ddmmyyyy format)
	Valid Till (Transport) (in ddmmyyyy format)
	Valid From (Non-Transport) (in ddmmyyyy format)
	Valid From (Non-Transport) (in ddmmyyyy format)

Colour Details					
Front Side		Reverse Side			
Sr. No.	Hex Code	Print colour	Sr. No.	Hex Code	Print colour
C1.	#f8951d	C: 0 M: 49 Y: 100 K:0	C1.	#ddf1fa	C:12 M: 1 Y:1 K:0
C2.	Gradient Color Top: #e7f5f5 Bottom:#a3daf7	Gradient Color Top:C:8 M: 0 Y:3 K:0 Bottom:C:33 M:1 Y:0 K:0	C2.	Gradient Colour Top: #e7f5f5 Bottom:#a3daf7	Gradient Colour Top: C:8 M: 0 Y:3 K:0 Bottom:C:33 M:1 Y:0 K:0
C3.	#edf8fc	C:6 M: 0 Y:1 K:0	C3.	#edf8fc	C:6 M: 0 Y:1 K:0

MACHINE READABLE ZONE *(applicable only if opted for Smart Card)*

The concerned State Governments shall provide the following features of the licence in the Machine Readable Zone, namely:-

Sr. No.	Field
1.	**DL Holder Personal Details :**
	Driving Licence Number (DL)
	Name of the DL Holder
	Full Name of the DL Holder
	Gender
	Guardian(Mother/Father/Husband) Name
	Relation with Guardian (e.g.: S/o, W/o , D/o)
	Date of Birth (in ddmmyyyy format)
	First Identification Mark
	Second Identification Mark
	Blood Group
	Mobile Number
	Email Id
	Alternate Mobile Number
	Emergency Contact Number
	Permanent Address
	PINCODE of Permanent Address
	State Code In Permanent Address
	District Name in Permanent Address
	Sub-division/Taluk name in Permanent Address
	Village Name in Permanent address
	Present Address
	State Code in Present address
	PINCODE of Present address
	District Name in present Address
	Sub-division/Taluk Name in present Address
	Village Name in Present address
2.	**Licence details :**
	Valid From (Transport) (in ddmmyyyy format)
	Valid Till (Transport) (in ddmmyyyy format)
	Valid From (Non-Transport) (in ddmmyyyy format)
	Valid From (Non-Transport) (in ddmmyyyy format)

	First Date of DL Issuance (in ddmmyyyy format)
	First (Original) Issuing Authority
	Date of Hazardous Validity (in ddmmyyyy format)
	Date of Hill Region validity (in ddmmyyyy format)
	Authority who issued Transport Authorization
	Transport Authorization Number
	Transport Authorization date (in ddmmyyyy format)
	Invalid carriage Vehicle Registration Number
	INVALID Carriage 2nd Vehicle Registration Number , if any
	Invalid carriage 3rd Vehicle Registration Number , if any
3.	**Class of Vehicle details :**
	Class of Vehicle (COV)
	Class of Vehicle Issue Date (in ddmmyyyy format)
	Class of vehicle – Issued By (Name & Designation)
	Badge No.
	Badge Issue Date (in ddmmyyyy format)
	Badge Issued by –LA Office
4.	**Image details :**
	Photograph of DL Holder
	Signature of DL Holder
5.	**Enforcement details :**
	Challan/Inward Number
	Challan Date (in ddmmyyyy format)
	Endorsement Authority ID
	Endorsement Authority Name
	Section/ Rule Violated
	Disqualification Type (Suspended/Cancelled)
	Disqualification period from (in ddmmyyyy format)
	Disqualification period Up to (in ddmmyyyy format)
	Class of Vehicle that is suspended/Cancelled
	Settlement date
	Review Date (in ddmmyyyy format)
	Review Authority Name
	Remarks .";

(h) the "FORM 23" shall be omitted;

(i) for 'FORM 23A', the following 'Form' shall be substituted, namely: -

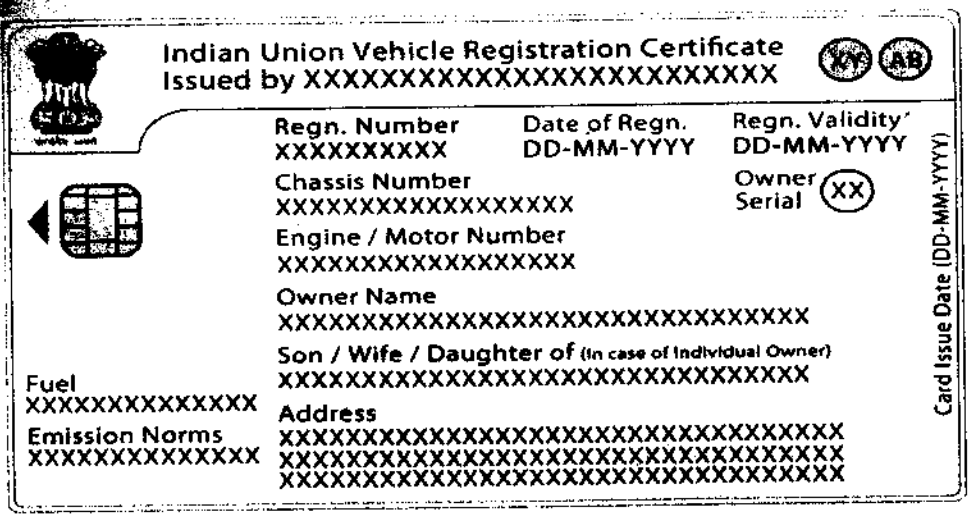
"FORM 23A

[See rule 48]

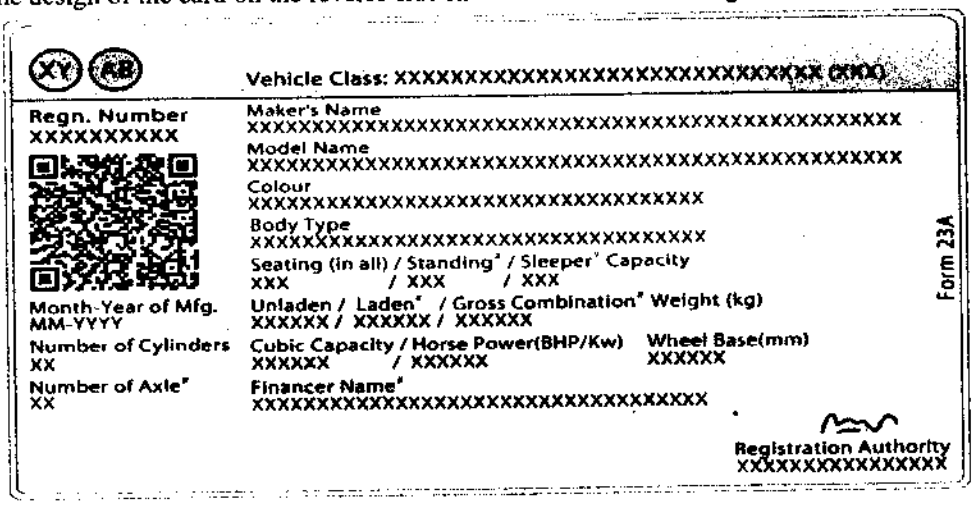
CERTIFICATION OF REGISTRATION (LAMINATED CARD WITHOUT CHIP OR SMART CARD)

VISUAL INSPECTION ZONE

...n of the card on the front side shall include the following data fields in visual form –

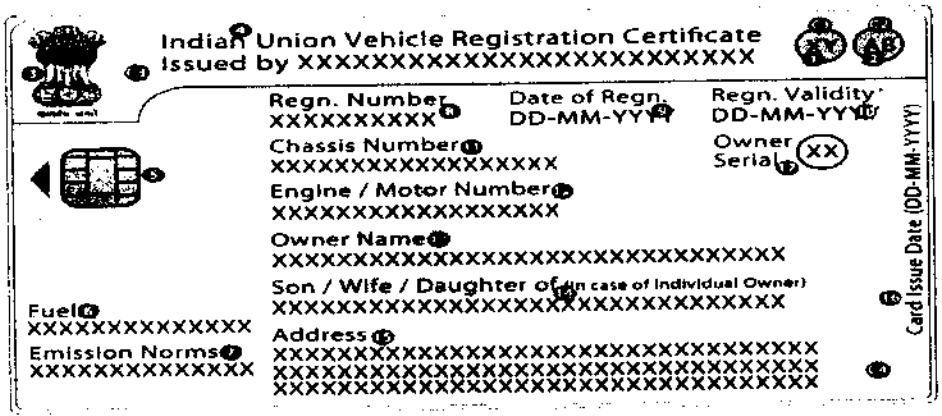


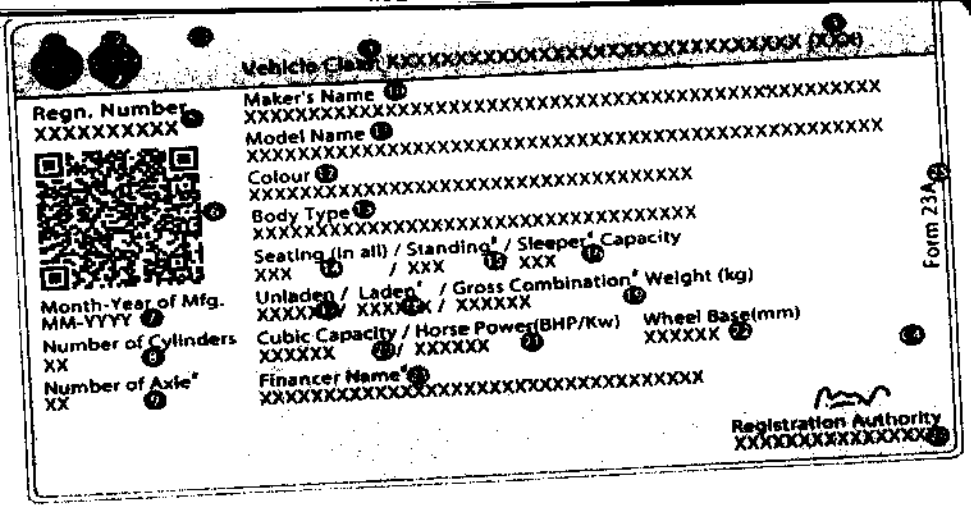
(B). The design of the card on the reverse side shall include the following data fields in visual form.



(C). The details of the features on the card shall be as under, namely:-

(a) For front side:





2. Specifications.-

(a) Card Size - 85.6mm x 54.02 mm +/- 2 mm; Thickness minimum 0.7 mm

(i) Card in the form of either laminated card type without chip; or

as per the defined template in the form of ICC (Integrated Circuit Card) compliant to ISO/IEC 7816-Part 1, 2, 3, 4, 8 and 9, IS16695 (Part 1: 2018) Smart Card Template Architecture Part 1: Basic Command Set (commonly known as SCOSTA Contact Smart Card);

(ii) PICC (Proximity Integrated Circuit Card) if provided, compliant to ISO/IEC 14443- Part 1, 2 3 and 4, ISO/IEC 7816-Part 4, 8 and 9, IS16695 (Part 1: 2018) Smart Card Template Architecture Part 1: Basic Command Set (commonly known as SCOSTA Contactless Smart Card), with card dimensions compliant to ISO/IEC 7810 ID-1 standard.

(b) Font Style and Size specifications

Front side				Reverse side			
Sr. No.	Features	Font Name	Size	Sr. No.	Features	Font Name	Size
1.	Category (NT/ TR)-XY	Myriad Pro Regular	7pt	1.	Category (NT/TR)-XY	Myriad Pro Regular	7pt
2.	State / UT Code-AB	Myriad Pro Regular	7pt	2.	State / UT Code-AB	Myriad Pro Regular	7pt
3.	Golden National Emblem	Symbol	7.37mm x 12.28mm	3.	Vehicle Class	Myriad Pro Regular	6pt
4.	Card Header	Myriad Pro Bold	8pt	4.	Vehicle Type (e.g. LMV/ HMV/HGV etc)	Myriad Pro Regular	6pt
5.	IC Chip (if opted for)	NA	NA	5.	Registration Number	Myriad Pro Regular	6pt
6.	Fuel	Myriad Pro Regular	7pt	6.	QR Code (As specified by the Central Government)	NA	15 mm x 15mm
7.	Emission Norms	Myriad Pro Regular	7pt	7.	Month & Year of Mfg.	Myriad Pro Regular	5.5pt

	[illegible]ration	Myriad Pro Bold	7pt	8.	Number of Cylinders	Myriad Pro Regular	5.5pt
	[illegible]ration	Myriad Pro Bold	7pt	9.	Number of Axle#	Myriad Pro Regular	5.5pt
	Registration Validity* (to be printed "As per Fitness" for Transport/ Commercial vehicle)	Myriad Pro Bold	7pt	10.	Maker's Name	Myriad Pro Regular	5.5pt
11.	Chassis Number	Myriad Pro Regular	7pt	11.	Model Name	Myriad Pro Regular	5.5pt
12.	Engine /Motor Number	Myriad Pro Regular	7pt	12.	Colour	Myriad Pro Regular	5.5pt
13.	Owner Name	Myriad Pro Regular	7pt	13.	Body Type	Myriad Pro Regular	5.5pt
14.	Son/ Daughter/ Wife of (in case of Individual Owner)	Myriad Pro Regular	7pt	14.	Seating (in all) Capacity	Myriad Pro Regular	5.5pt
15.	Address	Myriad Pro Regular	7pt	15.	Standing Capacity#	Myriad Pro Regular	5.5pt
16.	Card Issue Date	Myriad Pro Regular	6pt	16.	Sleeper Capacity#	Myriad Pro Regular	5.5pt
17.	Owner Serial	Myriad Pro Regular	7pt	17.	Unladen Weight (kg)	Myriad Pro Regular	5.5pt
				18.	Laden Weight# (kg)	Myriad Pro Regular	5.5pt
				19.	Gross Combination Weight# (kg)	Myriad Pro Regular	5.5pt
				20.	Cubic Capacity (Kw)	Myriad Pro Regular	5.5pt
				21.	Horse Power (BHP)	Myriad Pro Regular	5.5pt
				22.	Wheel Base (mm)	Myriad Pro Regular	5.5pt
				23.	Financer name#	Myriad Pro	5.5pt
				24.	Registering Authority's Name	Myriad Pro	5.5pt
				25.	Form 23A	Myriad Pro Regular	6pt

: Both Label and Value would be blank in cases where they are not applicable or have not been opted for

(c) Background Colour Details

Front Side			Reverse Side		
Sr. No.	**Hex Code**	**For Print Media**	**Sr. No.**	**Hex Code**	**For Print Media**
C1.	#44c7f1	C:60 M:0 Y:1 K:0	C1.	#44c7f1	C:60 M:0 Y:1 K:0
C2.	#f8951d	C:0 M: 49 Y:100 K:0	C2.	#f8951d	C:0 M: 49 Y:100 K:0
C3.	Gradient Colour Top: # e7f5f5 Bottom:#a3daf7	Gradient Colour Top: C:8 M: 0 Y:3 K:0 Bottom:C:33 M:1 Y:0 K:0	C3.	Gradient Colour Top: # e7f5f5 Bottom:#a3daf7	Gradient Colour Top: C:8 M: 0 Y:3 K:0 Bottom:C:33 M:1 Y:0 K:0
C4.	Gradient Colour Top: #ffffff Bottom:#cbe5ef	Gradient Colour Top: C:0 M: 0 Y:3 K:0 Bottom:C:9 M:2Y:3 K:0	C4.	Gradient Colour Top: #ffffff Bottom:#cbe5ef	Gradient Colour Top: C:0 M: 0 Y:3 K:0 Bottom:C:9 M:2Y:3 K:0

...ACHINE READABLE ZONE ***(applicable only if opted for Smart Card)***

...erned State Governments shall provide the following features of the Registration Certifica... Machine Readable Zone, namely:-

...No.	Field
1.	**Registration Details :**
	Registration Number
	Registration Date (in ddmmyyyy format)
	Purchase Date (in ddmmyyyy format)
	Registration Type (N, A, O, D)
	Registration Validity (in ddmmyyyy format) **(To be stored "As per Fitness" for Transport / Commercial vehicle)**
	Dealer Name
	Registering Authority Name
2.	**Personal Details :**
	Owner Name
	Son/Wife /Daughter of (if Individual)
	Owner Current Address
	Owner Permanent Address
	Owner Serial No.
	Ownership Type
3.	**Vehicle Details :**
	Vehicle Class
	Maker/Manufacturer
	Model
	No. of Cylinder
	Horse Power (format 99999.99)
	Seating Capacity
	Standing Capacity
	Sleeper Capacity
	Unladen Weight (kg)
	Laden Weight (kg)
	Gross Combination Weight, if applicable (kg)
	Wheelbase (mm)
	Cubic Capacity (format 99999.99)
	Floor Area (sq m) (format 999.999)
	Fuel
	Chassis No
	Engine No
	Body Type
	Colour
	Manufacturing Month & Year (mmyyyy)

	Amount
	Emission Norms
	Height (mm)
	Length (mm)
	Width (mm)
	AC Fitted (Y/N)
	Video Fitted (Y/N)
	Audio Fitted (Y/N)
4.	**Axle Details of Transport Vehicle :**
	Number of Axle
	Number of Tyre – Front Axle
	Number of Tyre – Rear Axle
	Number of Tyre – Tandem Axle
	Number of Tyre – Other Axle
	Front Axle (Description and Size of Tyre)
	Rear Axle (Description and Size of Tyre)
	Tandem Axle (Description and Size of Tyre)
	Other Axle (Description and Size of Tyre)
	Front Axle Weight (kg)
	Rear Axle Weight (kg)
	Tandem Axle Weight (kg)
	Other Axle Weight (kg)
	Overhang
	Rearhang
5.	**Additional Details of Attached Trailer / Semi-Trailer (if applicable) :**
	Number of attached Semi-Trailers
	Attached Trailer(s) Registration Mark
6.	**Additional Details of Linked Horse Vehicle No. (if this RC is of Semi-Trailer/Trailer) :**
	Horse Vehicle Registration Mark, if applicable
7.	**Hypothecation Details*3 :**
	Name of Financier
8.	**Challan Details*40 :**
	Challan No.
	Accused category (D – Driver, C – Conductor, O – Owner)
	Section (s) (code only with delimiter ",", if more than 1)
	Challaning Officer Name
	Location
	Challan Date & Time in ddmmyyyy /hh-mm format
	Disposing Officer Name
	Penalty
	Receipt No.

	Permanent Permit Details :
	Permit Number
	Permit Type (Description)
	Permit Issuing Authority Name
	Validity From (in ddmmyyyy format)
	Validity Up to (in ddmmyyyy format)
	Replacement Date (in ddmmyyyy format)
	Area (e.g. Local, Distt, Region, State etc.)
	Route From
	Route Up to
	Stages
	Route Length (km)
	Number of Trips per day
10.	**Details of alternative or additional Semi-Trailer(s) registered with an articulated vehicle (Registration No same as articulated vehicle) :**
	Body Type
	Unladen Weight (kg)
	Laden Weight (kg)
	Chassis No
	Front Axle (Number, Description and Size of Tyre)
	Rear Axle (Number, Description and Size of Tyre)
	Tandem Axle (Number, Description and Size of Tyre)
	Other Axle (Number, Description and Size of Tyre)
	Front Axle Weight (kg)
	Rear Axle Weight (kg)
	Tandem Axle Weight (kg)
	Other Axle Weight (kg)
11.	**Retro Fitting Details :**
	Kit Manufacturer
	Kit Type
	Kit Workshop
	Kit Serial Number
	Kit PUCC Norms
	Workshop License No
	Fitment Date (in ddmmyyyy format)
	Hydro Test Date (in ddmmyyyy format)
	Cylinder Serial Number .";

for 'Annexure XI', the following 'Annexure' shall be substituted, namely: -

"Annexure XI

[see clause(s) of rule 2, rule 16 and rule 48]

I. **Specifications of laminated card type without chip or Smart Card type Driving Licence and Registration Certificate.** -

(a) Integrated Circuit Card (ICC, commonly known as contact smart card) or Proximity Integrated Circuit Card (PICC, commonly known as contactless smart card).

(b) ICC shall be compliant to ISO/IEC 7816-1, 2 and 3 while PICC shall be compliant to ISO/IEC 14443-1, 2, 3 and 4.

(c) Both ICC and PICC shall also be compliant to ISO/IEC 7816-4, 8 and 9, IS-16695 Part I, 2018 (commonly known as SCOSTA).

(d) Minimum 10 years data retention for the non-volatile memory in the form of EEPROM or FLASH.

(e) Minimum 300,000 write cycles endurance for the non-volatile memory.

(f) The hardware (controller) shall be in compliance and certified to be EAL4+ (or higher) common criteria certificate along with security target of evaluation of microcontroller (in case of ROM based OS implementation) or of the microcontroller along with Boot loader/Flash loader/Smart Program/Boot Program (in case of Flash based OS implementation) under the Common Criteria Certificate. The common Criteria Certificate refers to BSI-CC-PP-0035-2007/BSI-CC-PP-0084-2014 (or newer) Protection profile.

(g) The operating system shall be loaded in the Flash Memory or in the ROM with the chip at wafer level in the facility fully owned by the chip manufacturer and shall be locked at that facility in a way that it cannot be altered, modified, erased or deleted either selectively or wholly.

(h) Operating ambient temperature range -25C to +55C.

(i) For Poly Vinyl Chloride (PVC): Glossy surface, Poly Vinyl Chloride (PVC)/Acrylonitrile Butadiene Styrene (ABS)/PetG plastic construction, with overlay to allow colour dye sublimation printing.

(j) For Polycarbonate Card: Multi-layered card construction using pure polycarbonate layer, fused (laminated) together with heat and pressure without any kind of glue or adhesive. Card Body material including outer overlay shall be capable of personalisation through Laser engraving.

II. **Material Specifications for Driving License and Registration Certificate.** -

(a) Dimension of the Card.- The cards used for the Driving License and Registration Certificate shall be compliant to ISO/IEC 7810 standard as defined for ID-1 unused and returned cards. The tolerances, edge burrs etc. shall be as defined for the ID-1 cards in ISO/IEC 7810 section 5. All dimensions of the card shall be measured as per the ISO/IEC 10373-1 standard as defined in section 5.2 under the standard testing conditions as defined in ISO/IEC 10373-1.

(b) Card Warpage and Surface Distortion. - The maximum distance from a flat rigid plate to any portion of the convex surface of the card shall not be greater than 1.5 mm including the card thickness. Further, the difference between the maximum and minimum thickness of the finished card shall not be more than 0.10 mm. For measuring the maximum and minimum thicknesses, the contact chip shall also be considered. Thus, no point of the entire IC contact surface shall be higher than 0.10 mm above or lower than 0.10 mm below the adjacent surface of the card. The test shall be carried out using the standard measurement method as described in ISO/IEC10373-1.

(c) Card Material and Construction. - The cards shall be made of Polyvinyl Chloride (PVC), Acrylonitrile Butadiene Styrene (ABS) or PetG or Poly Carbonate (PC) plastic material unless specified otherwise. The card construction shall be made of bonded materials with inserts of the ISO7816-2 compliant contact chip (for ICC) if provided, or with inserts of the ISO144443 compliant contactless chip with associated antenna (for PICC), if provided.

...acteristics. - The card characteristics shall be as defined in ISO/IEC 7810 standa... ...ined here:-

(i) **Bending Stiffness.** – (1). The bending stiffness shall be as defined in ISO/IEC 7810. The test procedures shall be as described in ISO/IEC 10373-1 section 5.7. For carrying out the bending stiffness test, the cards shall be exercised in the following four configurations, namely:-

(a) With the embedded chip facing upward and the edge of the card closer to the chip placed towards the clamping device.

(b) With the embedded chip facing upward and the edge of the card closer to the chip placed away from the clamping device.

(c) With the embedded chip facing downward and the edge of the card closer to the chip placed towards the clamping device.

(d) With the embedded chip facing downward and the edge of the card closer to the chip placed away from the clamping device.

(2). The maximum permitted bending deformation shall be identical in all the four configurations.

(ii) **Resistance to chemicals.** – Cards shall be resistant to the chemicals as described in ISO/IEC 7810 section 8.4. The chemical resistance shall be tested as per the procedure outlined in ISO/IEC 10373-1 section 5.4, using reagents both for short-term and long-term contamination.

(iii) **Storage Requirements.** – (1). The card characteristics as defined in this section of the document shall remain unaltered for the following range of temperature and humidity as storage requirements, namely:-

(a) Temperature range of 5-40°C.

(b) Relative humidity range of 10-85%.

(2). The cards shall be tested for the bending stiffness after exposing it to the following two environment conditions, namely:-

(I) 5°C at 10%RH, and

(II) 40°C at 85%RH.

(3). The exposure for each of these two conditions shall be for one hour in the environment. This test only establishes the card characteristics and does not establish any print quality characteristics, which are defined later.

(iv) **Peel Strength.** - The peel strength of the component layers of the card material shall be as per the minimum specified in ISO/IEC 7810 section 8.8. The peel strength shall be tested as per the procedure outlined in ISO/IEC 10373-1 section 5.4 with a peeling angle of 90°.

(v) **Adhesion Resistance.** – (a) When finished cards are stacked together in a stock of 5 cards and applied 1.5 Kg dead weight from the top, kept for 7 days at 40 ± 3°C, 80%RH, no card shall show any adverse effect such as delamination, discolouration or colour transfer to adjacent cards, changes to surface finish, transfer of material from one card to another and deformation. The physical dimension of the all cards shall remain as described in section 5 of this document.

(b) The cards shall be tested for easy separation by hand for randomly chosen cards in the middle of the stack and will be inspected visually for the colour transfer, discolouration, changes in the surface finish etc. The dimension of the cards, card warpage and surface distortion after each test shall be tested to be within the limits as described in this document.

Dynamic Bending. - The cards shall be tested for dynamic bending as per the procedure outlined in ISO/IEC 10373-1 section 5.8. The h_v and h_w parameters shall be used as defined in ISO/IEC 10373-1 (i.e. 2mm and 20mm for bending along axis B, and 1mm and 10mm for bending along axis A). The cards shall continue to work electronically after the test is performed with 250 bending each along axis A and axis B and with card contacts facing upwards as well as downwards. The cards shall be tested after the cycle of 1000 bending tests for the following, namely:-

(i) The dimensions of the card.

(ii) Card warpage and surface distortion.

(iii) The presence of Answer to Reset (ATR) or Answer to Select (ATS) sequence after insertion in the ISO7816-3 compliant interface device (IFD) or ISO14443-4 compliant proximity coupling device (PCD), as the case may be.

(iv) The contact resistance being within the limits for all contact pads for an ICC.

(f) **Dynamic Torsional Stress.**-The cards shall be subjected to dynamic torsional stress test as outlined in ISO/IEC 10373-1 section 5.9. The parameters shall be as defined in ISO/IEC 10373-1. After the cycle torsional stress application, the cards shall be tested for the following, namely:-

(i) The dimension of the card.

(ii) Card warpage and surface distortion.

(iii) The presence of Answer to Reset (ATR) or Answer to Select (ATS) sequence after insertion in the ISO7816-3 compliant interface device (IFD) or ISO14443-4 compliant proximity coupling device (PCD), as the case may be.

(iv) The contact resistance being within the limits for all contact pads for an ICC.

(g) **Stability against UV Exposure.**-The pre-printed layers of the card material shall show no visible degradation of the print quality under the following conditions, namely:-

(i) Exposure to UV lighting for 21 minutes at UV irradiance of 0.12 mW/mm^2 at 254nm wavelength.

(ii) The cards shall be exposed to such UV light source as per the testing procedure defined in ISO/IEC 10373-1 section 5.11. After the exposure cycle, the cards shall be tested for the following, namely:-

(a) The dimension of the card.

(b) Card warpage and surface distortion.

(c) Bending stiffness test.

(d) The contact resistance being within the limits for all contact pads for an ICC.

(e) Visual print quality for the pre-printed layers, which shall not show any visible degradation, discolouring, change of surface finish or delamination.

(h) **Print Quality.** – (a) The print shall be verified for the visual appearance of the pre-printed layers, which must not show any visible degradation, discolouring, change of the surface finish, change of the surface colours, and presence of visible unwanted colour marks under the following conditions, namely:-

(i) Temperature of 0°C with a relative humidity of 10%.

(ii) Temperature of 46°C with a relative humidity of 90%.

(b) The temperature and relative humidity shall be established in the environment control chambers and the cards shall be exposed for 20 minutes in the corresponding environment condition. After the exposure, the card shall be visually inspected for the print quality on the pre-printed layers of the card material.

(i) **Electrical Contacts (applicable for ICC, or contact smart cards only.** – (1). The cards provide the following contacts at location as defined in ISO/IEC 7816-2, namely:-

(i) C1: supply power input (VCC).

(ii) C2: reset signal input (RST).

(iii) C3: clock signal input (CLK).

(iv) C5: ground (GND).

(v) C7: bidirectional serial data (I/O).

(2). The maximum and minimum currents and potential on each of these contacts are as defined in ISO/IEC 7816-3.

(j) **Mechanical Strength of Card Contacts (applicable for ICC, or contact smart cards only).** – (i) The card should resist damage to its surface, to any components contained in it, and should remain intact during normal use, storage and handling.

(ii) Each contact surface and contact area (entire galvanic surface) shall not be damaged by a working pressure equivalent to a steel ball of diameter 1 mm applying a force of 1.5 N.

(iii) The test shall be carried out by applying the pressure as mentioned above for 5 minutes and checked for card being functional for the presence of ATR in an ISO7816-3 compliant reader.

(k) **Electrical Resistance of Card contacts (applicable for ICC, or contact smart cards only).** - The contact resistance of a card contact pad as defined in ISO/IEC 7816-2 should be less than 0.5 Ω between two points on the same contact pad at a distance of 1.5mm. The card shall be tested for all the five contacts as specified in section 13 of this document at random locations within the contact.

III. **Specifications for Printing on the finished card surface. –(a) Printing Requirements on finished cards.** - The finished cards shall be as per the specifications outlined in this document. The finished cards shall then be subjected to personalisation – electronic as well as visual on the card surfaces. Typically, dye sublimation printing is used for visual personalisation. These tests shall be performed after printing on the card surfaces – both bottom as well as top, using the standard card printers being used in the field for visual personalisation. The printing of text and photograph for the testing shall be as typical of any driving license and vehicle registration certificate and as specified in the visual layout for the same.

(b) **Ink Adhesion.** - (i) The personalised printing on the cards shall show good quality ink adhesion as indicated below. (Ref: IPC-TM-650 Test Method Number 2.4.1 for Adhesion Tape testing).

(ii) With the tape and procedure as described in the test method, the evaluation shall be carried out. The visual examination of the tape used for the testing and the test area of the substrate will be carried out for the ink adhesion performance of the specimen in the following grades, namely:-

Grade 1: No removal of ink (tape will not show any marking of the ink when peeled off).

Grade 2: Slight removal of ink (tape will show markings of the ink but the ink impressions on tape adhesive side will not be readable) amounting to <10% of ink removal.

Grade 3: High removal of ink (the ink impression on the tape adhesive side will be readable) amounting to more than 10% of ink removal.

(c) **Exposure to the environmental parameters.** - (i) The visually personalized cards shall be tested for ink adhesion after exposing it to the following two environment conditions, namely:-

(A) 5°C at 10%RH; and

(B) 40°C at 85%RH.

(ii) The exposure for each of these two conditions shall be for one hour in the environment and the ink adhesion test will be performed immediately after the exposure. The specimen shall show Grade 1 quality for both tests.

(d) **Exposure to UV.** - The visually personalised cards shall be exposed to UV lighting for 21 minutes at UV irradiance of 0.12 mW/mm^2 at 254nm wavelength as per the testing procedure defined in ISO/IEC 10373-1 section 5.11. Immediately after the exposure cycle, the visual personalisation shall be tested for the ink adhesion. The specimen shall show Grade 2 or Grade 1 quality for the test.

(e) **Stacking and layering.** – When visually personalised cards are stacked together in a stock of 5 cards and applied 1.5 Kg dead weight from the top, kept for 2 days at 40 ± 3°C, 80% RH, no printing on the card surfaces shall show any adverse effect discolouration or colour transfer to adjacent cards. The cards after subjecting to this test shall be tested for ink adhesion. The specimen shall show Grade 1 quality for the test.".

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PRIYANK BHARTI, Jt. Secy.

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