



MONTHLY WEATHER REPORT OF DELHI FEBRUARY 2025

Significant Weather Observations

- On 1st February, very dense fog was reported with visibility reaching up to 0 meters.
- On 2nd and 3rd February, dense fog was reported with visibility reaching up to 50 meters.
- On 4th, 5th, 20th, 27th and 28th February, Rain was reported over Delhi/NCR (Figure 1)
- During the month, the maximum temperature was less than normal only on two days, on remaining days, it was above normal by 1-6°C. On 11th and 26th February, Maximum temperature was above normal by 6.3°C. (Figure 3)
- Minimum temperature showed variable trend during the month (Figure 5).

Key points for the month

On 27th February 2025, the minimum temperature recorded at Safdarjung observatory was 19.5°C which is the highest minimum temperature in the month of february since 1951. It was above normal by 7°C.

Meteorological Analysis

- On 1st February, the Western Disturbance as a cyclonic circulation over north Pakistan & neighbourhood between 3.1 & 5.8 km above mean sea level persisted. A fresh Western Disturbance as a cyclonic circulation lies over South Iran & neighbourhood between 3.1 & 7.6 km above mean sea level.
- On 2nd February, the Western Disturbance as a cyclonic circulation over southeast Iran & adjoining Afghanistan lay over West Afghanistan & adjoining Iran between 3.1 & 9.4 km above mean sea level. The Western Disturbance as a cyclonic circulation over Jammu & adjoining North Pakistan between 3.1 & 5.8 km above mean sea level had moved away east-northeastwards.
- On 3rd February, the Western Disturbance as a cyclonic circulation over southeast Iran & adjoining Afghanistan lay over West Afghanistan & adjoining Iran between 3.1 & 9.4 km above mean sea level. The Western Disturbance as a cyclonic circulation over Jammu & adjoining North Pakistan between 3.1 & 5.8 km above mean sea level had moved away east-northeastwards.
- On 4th February, The Western Disturbance as a cyclonic circulation over West Afghanistan & neighbourhood was seen as a trough in lower to upper tropospheric levels with its axis at 3.1 km above mean sea level runs roughly along Long. 65°E to the north of Lat. 23°N. An induced cyclonic circulation lies over northwest Rajasthan & adjoining central Pakistan at 1.5 km above mean sea level. A trough ran from the above cyclonic circulation over northwest Rajasthan & adjoining central Pakistan to Northeast Arabian Sea across Gujarat at 1.5 km above mean sea level.
- On 5th February, the Western Disturbance was seen as a trough in lower & middle tropospheric levels with its axis at 5.8 km above mean sea level roughly along Long. 70°E to the north of Lat. 25°N. The induced cyclonic circulation over northwest Rajasthan & adjoining central Pakistan at 1.5 km above mean sea level had become less marked. The trough from the above cyclonic circulation over northwest Rajasthan & adjoining central Pakistan to Northeast Arabian Sea across Gujarat at 1.5 km above mean sea level had become less marked. The cyclonic circulation over South Rajasthan & neighbourhood at 0.9 km above mean sea level had become less marked.
- On 6 February, the Western Disturbance was seen as a cyclonic circulation over north Pakistan and adjoining Jammu region at 3.1 km above mean sea level with a trough aloft in middle tropospheric level with its axis at 5.8 km above mean sea level roughly along Long. 72°E to the north of Lat. 30°N.
- On 7 February, the Western Disturbance was seen as a cyclonic circulation in middle tropospheric levels over north Iran & neighbourhood.
- On 8 February, the Western Disturbance as a cyclonic circulation in middle tropospheric levels over north Iran & neighbourhood was seen as a trough in middle & upper tropospheric westerlies with its axis at 5.8 km above mean sea level runs roughly along Long. 58°E to the north of Lat. 32°N. An induced cyclonic circulation lied over southwest Rajasthan & neighbourhood at 1.5 km above mean sea level.
- On 9 February, the Western Disturbance was seen as a cyclonic circulation over North Afghanistan & neighbourhood between 3.1 & 5.8 km above mean sea level. The induced cyclonic circulation over southwest Rajasthan & neighbourhood at 1.5 km above mean sea level persisted.
- On 10 February, the Western Disturbance as a cyclonic circulation over North Afghanistan & neighbourhood between 3.1 & 5.8 km above mean sea level persisted. The induced cyclonic circulation over southwest Rajasthan & neighbourhood at 1.5 km above mean sea level persisted.

- On 11 February, the Western Disturbance as a cyclonic circulation over North Afghanistan & neighbourhood now lies over northeast Afghanistan & adjoining Pakistan between 3.1 & 5.8 km above mean sea level. The induced cyclonic circulation over southwest Rajasthan & neighbourhood at 1.5 km above mean sea level persisted.
- On 12 February, the Western Disturbance as a cyclonic circulation over north Pakistan & neighbourhood at 3.1 km above mean sea level persisted.
- On 15 February, a Western Disturbance as a trough in middle tropospheric westerlies with its axis at 5.8 km above mean sea level ran roughly along Long. 67°E to the north of Lat. 34°N. An Induced cyclonic circulation lay over Northwest Rajasthan & adjoining area of South Punjab and Pakistan and extends upto 1.5 km above mean sea level.
- On 16 February, the Western Disturbance as a trough in middle tropospheric westerlies with its axis at 5.8 km above mean sea level roughly along Long. 70°E to the north of Lat. 35°N persists. The Induced cyclonic circulation over Haryana & neighbourhood at 1.5 km above mean sea level persisted.
- On 17 February, a Western Disturbance seen as a trough in middle tropospheric westerlies with its axis at 5.8 km above mean sea level ran roughly along Long. 67°E to the north of Lat. 33°N. An Induced cyclonic circulation over West Rajasthan & neighbourhood at 1.5 km above mean sea level. The Western Disturbance as a trough in middle tropospheric westerlies with its axis at 3.1 km above mean sea level roughly along Long. 71°E to the north of Lat. 33°N had moved away eastnortheastwards.
- On 18 February, the Western Disturbance as a trough in middle tropospheric westerlies with its axis at 5.8 km above mean sea level roughly along Long. 67°E to the north of Lat. 33°N was seen as a cyclonic circulation over north Pakistan & neighbourhood at 3.1 km above mean sea level. The Induced cyclonic circulation over West Rajasthan & neighbourhood lay over southwest Rajasthan & neighbourhood and extended upto 1.5 km above mean sea level. A fresh Western Disturbance was seen as a trough in middle tropospheric level with its axis at 5.8 km above mean sea level roughly along Long. 55°E to the north of Lat. 32°N.
- On 20th February, The Western Disturbance is was seen as a cyclonic circulation over north Pakistan & neighbourhood between 3.1 & 4.5 km above mean sea level with a trough aloft in middle & upper tropospheric level with its axis at 5.8 km above mean sea level roughly along Long. 70°E to the north of Lat. 30°N. The induced cyclonic circulation lay over West Rajasthan & neighbourhood and extends upto 1.5 km above mean sea level.
- On 21st February, the cyclonic circulation over Haryana & neighbourhood persisted and was seen at 1.5 km above mean sea level.
- On 22nd February, a cyclonic circulation lay over northeast Pakistan & adjoining Jammu region at 1.5 km above mean sea level. The cyclonic circulation over Haryana & neighbourhood at 1.5 km above mean sea level had become less marked.
- On 23rd February, a fresh Western Disturbance was seen as a cyclonic circulation over north Iran & neighbourhood between 3.1 & 9.6 km above mean sea level.
- On 24th February, the Western Disturbance was seen as a trough in lower to upper tropospheric levels with its axis at 3.1 km above mean sea level roughly along Long. 46°E to the north of Lat. 23°N. A cyclonic circulation lay over South Pakistan & neighbourhood extending upto 1.5 km above mean sea level. The cyclonic circulation over north Pakistan & neighbourhood at 1.5 km above mean sea level had become less marked.

- On 25th February, The Western Disturbance as a trough in lower to upper tropospheric levels with its axis at 3.1 km above mean sea level ran roughly along Long. 50°E to the north of Lat. 24°N. There was Divergence of the order of $20-30 \times 10^{-6} \text{ s}^{-1}$ in forward sector of the trough over North Pakistan and adjoining Indian Himalayas. The upper air cyclonic circulation over South Pakistan & neighbourhood lay over southwest Rajasthan & adjoining south Pakistan and extended upto 1.5 km above mean sea level.
- On 26th February, the Western Disturbance as a trough in lower to upper tropospheric levels with its axis at 3.1 km above mean sea level roughly along Long. 56°E to the north of Lat. 24°N persisted. There was a Divergence of the order of $30-40 \times 10^{-6} \text{ s}^{-1}$ in forward sector of the trough over North Pakistan and adjoining Indian Himalayas. The cyclonic circulation over southwest Rajasthan & adjoining south Pakistan lay over northwest Rajasthan & adjoining Pakistan at 0.9 km above mean sea level.
- On 27th February, the Western Disturbance as a trough in lower to upper tropospheric levels with its axis at 5.8 km above mean sea level ran roughly along Long. 56°E to the north of Lat. 28°N. There was a Divergence of the order of $20-30 \times 10^{-6} \text{ s}^{-1}$ in the forward sector of the trough over Northwest India. The induced cyclonic circulation lay over northwest Rajasthan & neighbourhood at 1.5 km above mean sea level. A trough ran from the above cyclonic circulation over northwest Rajasthan & neighbourhood to northeast Arabian Sea at 1.5 km above mean sea level.
- On 28th February, the Western ran as a trough in lower to upper tropospheric levels with its axis at 3.1 km above mean sea level roughly along Long. 59°E to the north of Lat. 26°N. There was a Divergence of the order of $30-40 \times 10^{-6} \text{ s}^{-1}$ in the forward sector of the trough over Northwest India. Under the influence of the cyclonic circulation over northwest Rajasthan, an induced lowpressure area had formed over west Rajasthan & adjoining parts of Pakistan. Associated cyclonic circulation extended upto 1.5 km above mean sea level. The trough ran from the above system over west Rajasthan & adjoining parts of Pakistan to northern parts of Madhya Maharashtra across Gujarat at 0.9 km above mean sea level.
- Subtropical westerly Jet Stream with core winds of the order up to 160 knots at 12.6 km above mean sea level prevailed over Northwest India from 1st February to 19th February 2025.

Rainfall

The normal rainfall during the month is **21.3 mm** (climatology 1971-2020) at Safdarjung Observatory. However, during this month, **1.4 mm** of rainfall was recorded. The actual rainfall was **93%** below normal (the long period average).

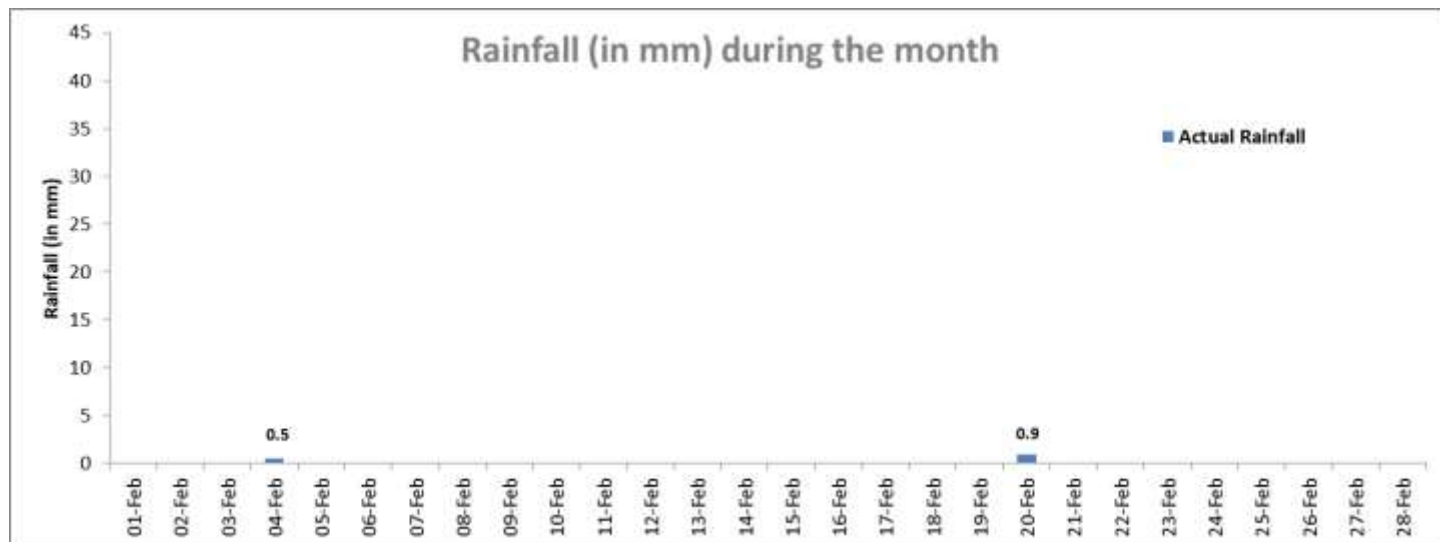


Figure 1. Actual Rainfall during the month

Rainfall Departures of Manual Observatories of Delhi during the Month

STATION	Actual Rainfall (in mm)	Normal Rainfall (in mm)	Departure (%)
Safdarjung	1.4	21.3	-93
Palam	1.0	19.3	-95
Lodhi Road	1.4	21.3	-93
Ridge	0.2	19.0	-99
Ayanagar	1.4	19.7	-93

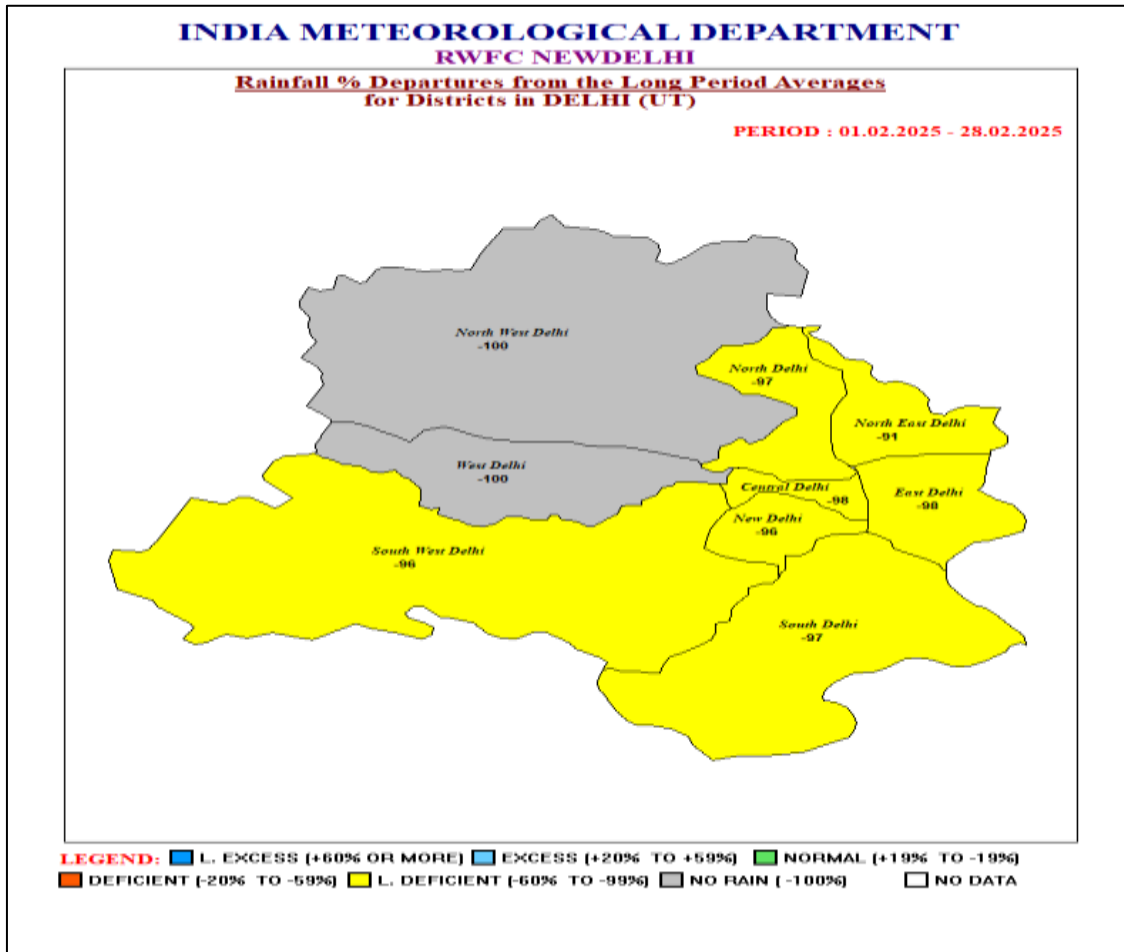


Figure 2. Rainfall % departure from the long period average for districts in Delhi

Temperature Summary of the month

Maximum Temperature

Maximum temperatures were **above normal** on 3rd, 8th, 14th, 20th, 24th, 25th February, **appreciably above normal** on 01st, 4th, 9th, 10th, 12th, 15th, 16th, 17th, 18th, 19th February, **markedly above normal** on 11th & 26th and **normal** on remaining days of the month. The mean maximum temperature for the month was **26.7°C** which is **2.5°C** above its climatological mean of the month, i.e. **24.2°C**. The highest maximum temperature was **32.4°C** recorded on **26th February**. The all-time record of maximum temperature for the month is **34.1°C** recorded on **26th February 2006**.

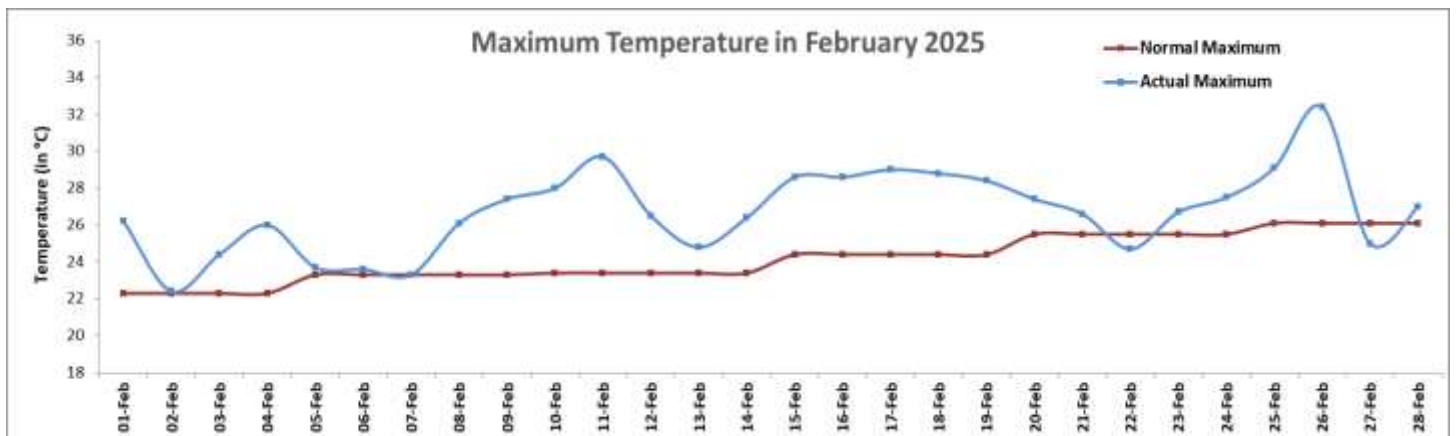


Figure 3. Monthly trend of Maximum temperature as compared to the Normal temperature

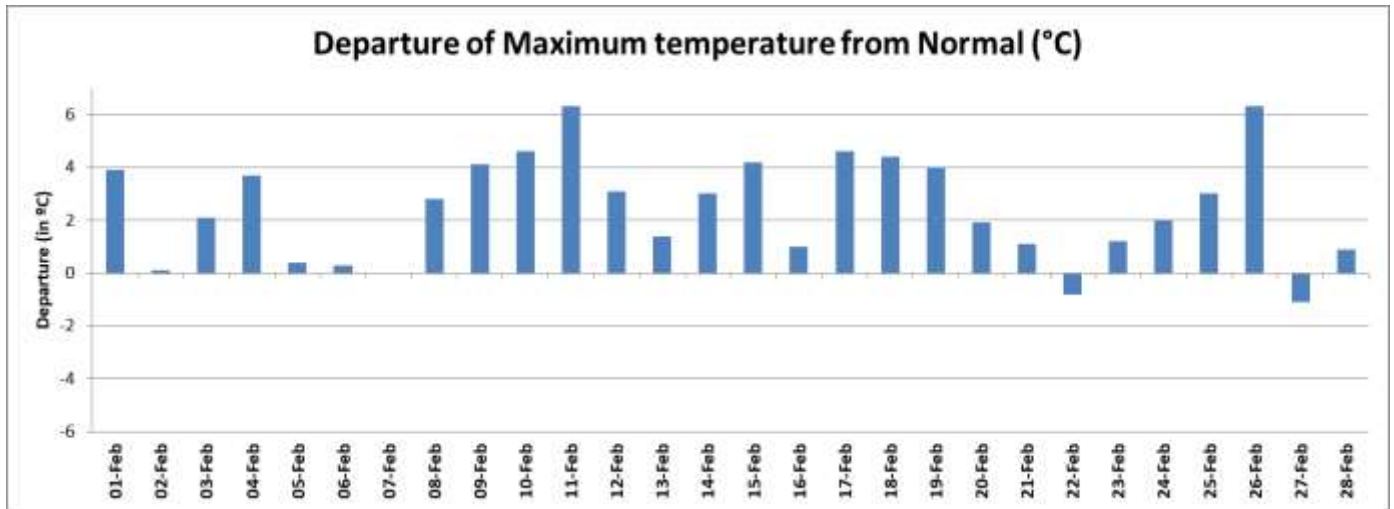


Figure 4. Departure of Maximum temperature from Normal temperature

Minimum Temperature

Minimum temperatures were **above normal** on 1st, 3rd, 5th, 13th, 18th, 26th February, **appreciably above normal** on 2nd, 4th, 20th February, **markedly above normal** on 27th and 28th, **below normal** on 9th and normal on remaining days of the month. The mean minimum temperature for the month was **11.6°C**, which is **1.0°C above** the climatological mean of the month, i.e. **10.6 °C**. The lowest minimum temperature was **7.8°C** recorded on 9th February. The all-time record of minimum temperature for the month is **1.6 °C** recorded on 9th February 1982.

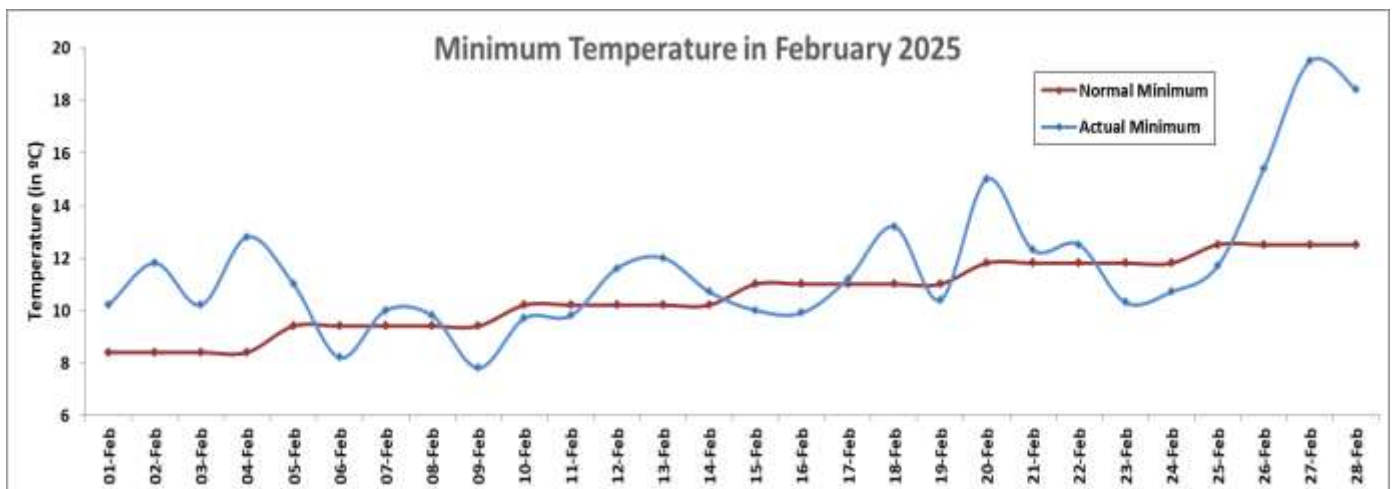


Figure 5. Monthly trend of Minimum temperature as compared to the Normal temperature

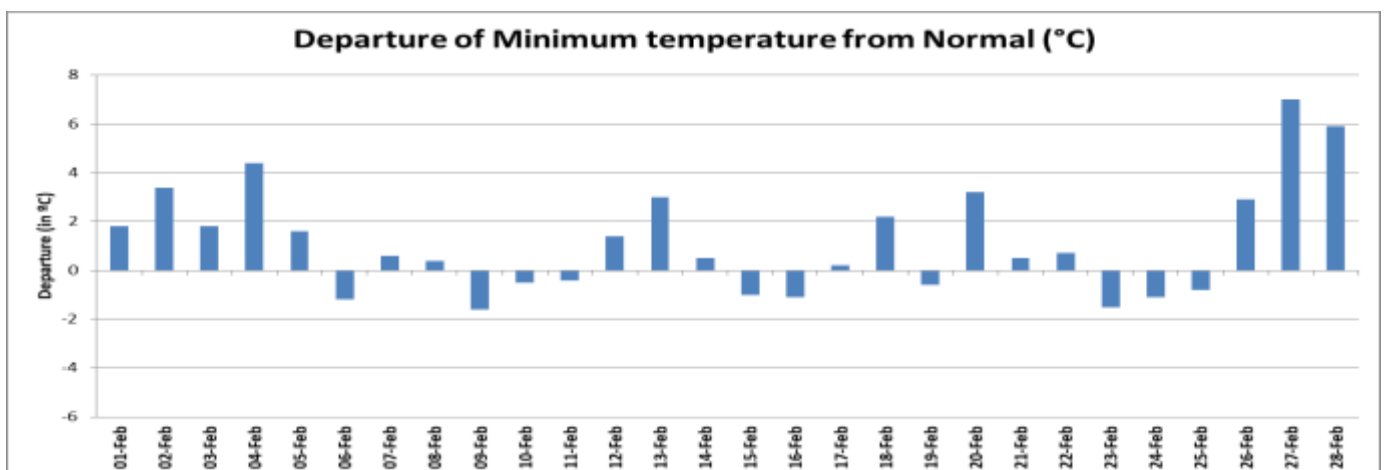


Figure 6. Departure of Minimum temperature from Normal temperature

ACTUAL TEMPERATURE OBSERVED AT MANUAL OBSERVATORIES OF DELHI DURING THE MONTH

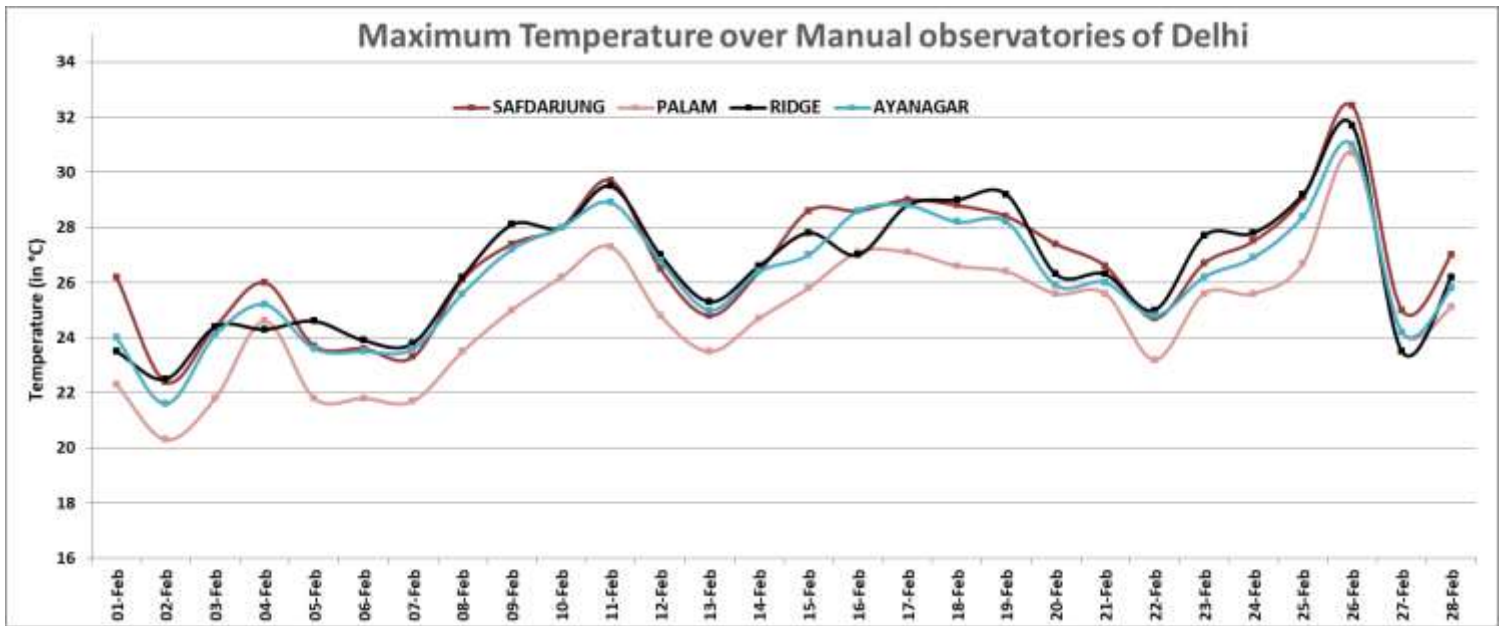


Figure 7. Monthly trend of Maximum temperature over Manual observatories of Delhi

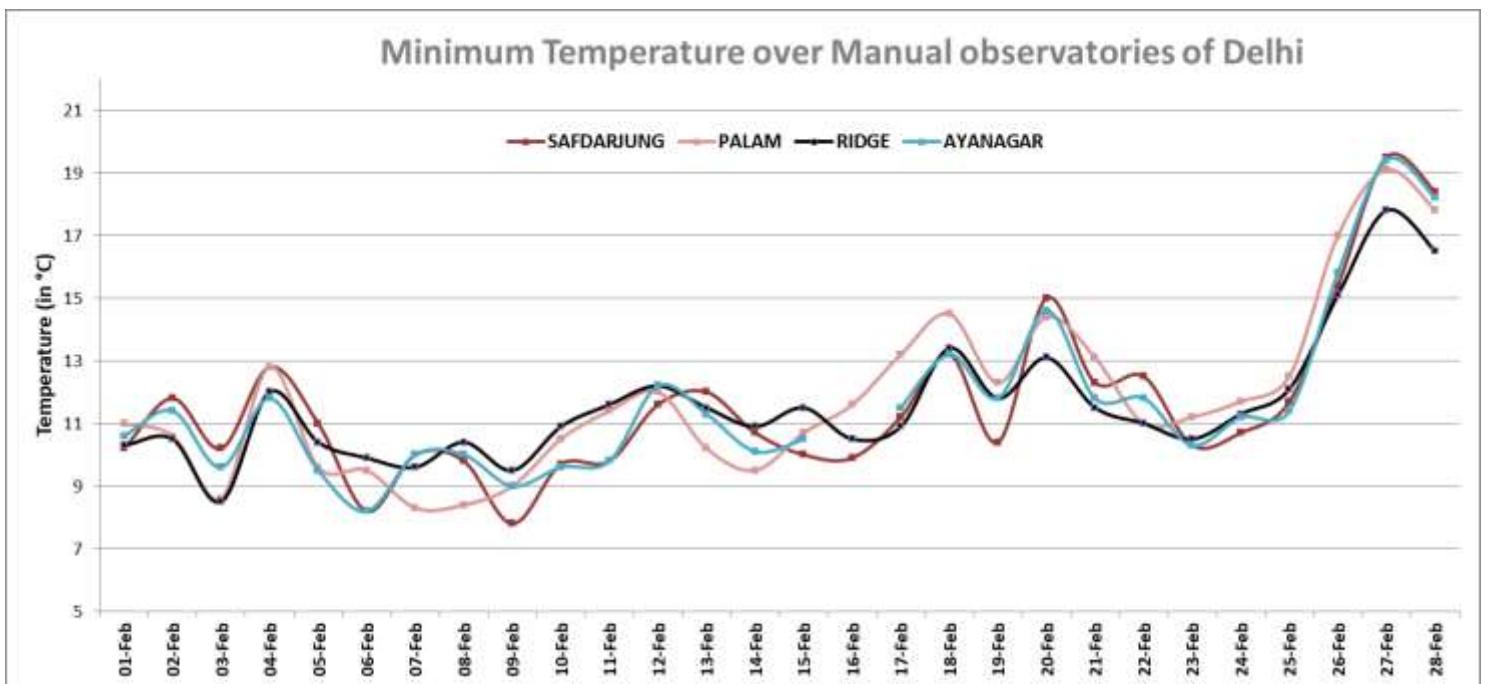


Figure 8. Monthly trend of Minimum temperature over Manual observatories of Delhi

Average Temperature Departure during the Month

STATION	Average Actual Temperature over the month (in °C)		Average Normal Temperature over the month (in °C)		Average Departure (in °C)	
	Max	Min	Max	Min	Max	Min
Safdarjung	26.7	11.6	24.2	10.6	2.5	1.0
Palam	24.8	11.8	24.1	10.6	0.7	1.2
Ridge	26.5	11.6	24.4	12.1	2.1	-0.5
Ayanagar	26.2	11.7	24.3	11	1.9	0.7

Legends:

Departure = Observed temperature – Normal Temperature

Markedly above normal	Appreciably above normal	Above normal	Normal	Below normal	Appreciably below normal	Markedly below normal
5.1 and above	3.1 to 5.0	1.6 to 3.0	1.5 to -1.5	-1.6 to -3.0	-3.1 to -5.0	-5.1 and below

Terminology	Rainfall Range (mm)
Light Rainfall	up to 15.5
Moderate Rainfall	15.6 to 64.4
Heavy Rainfall	64.5 to 115.5
Very heavy Rainfall	115.6 to 204.4

Light Spell:	<5 mm/hr
Moderate Spell:	5- 15 mm/hr
Heavy Spell:	>15 mm/hr

Classification of Fog	
Fog type	Visibility Range (in meters)
Shallow	500-1000
Moderate	200-500
Dense	50-200
Very Dense	Less than 50 meters