



Government of Pakistan
Pakistan Meteorological Department
Pakistan Monthly Climate Summary
December 2024

In brief

- The national area-weighted rainfall of only 1.6mm, was excessively below average with a negative anomaly of **-88%** in December-2024.
- The heaviest one-day rainfall of 25.0 mm occurred at Mirkhani (KP) on 3rd December. Whereas, the station Kalam (KP) has been the wettest place with monthly total of 33.0 mm.
- The national mean monthly temperature of 12.27 °C for Pakistan was cooler by **-0.49 °C** than the country-average of 12.77 °C.
- The daytime (maximum) temperature (20.03 °C) at country-level also happened to be **cooler but by lesser extent of -0.22 °C** than the country-average of 20.25 °C.
- The country-level nighttime (minimum) temperature of 4.5 °C too was **slightly cooler by -0.35 °C** than the countrywide average of 4.85 °C.
- The **hottest** day of the month was observed at Gwadar (Balochistan) on 5th December when it recorded a maximum temperature of **33.5 °C**. Whereas the station, Lasbela (Balochistan) found to be the **warmest** place with a mean monthly maximum temperature of **28.4 °C**.
- The **coldest** night temperature of **-13.2 °C** of the month was recorded at Skardu (GB) on 26th. Coincidentally, the same station happened to be the **coolest** place with mean monthly minimum temperature of **-8.2 °C**.
- The El Niño–Southern Oscillation (ENSO) has shifted a bit more to La Niña with sea surface temperatures (SSTs) being around -0.6 °C over the central equatorial Pacific Ocean and likely fall further.
- The Indian Ocean Dipole (IOD) is slightly inclined to negative phase.

Table-1: National Weather Extremes during December 2024

Hottest day	33.5 °C	at Gwadar (Balochistan) on 5 th
Coldest day	0.0 °C	at Bagrote (GB) on 12 th
Coldest night	-13.2 °C	at Skardu (GB) on 26 th
Warmest night	20.8 °C	at Karachi (Sindh) on 4 th
Wettest day	25.0 mm	at Mirkhani (KP) on 3 rd
Wettest month	33.0 mm	at Kalam (KP)

Synoptic Summary

The dry continental air with dense foggy conditions remained a predominant feature of the month across most parts of the country. In all, three weak westerly waves entered northern parts of the county during 1-3, 8 -12 & 26-28 and gripped Khyber Pakhtunkhwa (KP), Gilgit-Baltistan (GB), Kashmir and Northern Punjab. The 1st wave (1-3 Dec) also affected North/northeast Balochistan along with Upper Sindh. These waves caused some light-intensity rainfall in Northern areas of Punjab, KP, GB, Kashmir, western Balochistan and isolated places in southern Punjab and Upper Sindh. A dry spell continued to prevail over rest of the month with intense fog prevailed over Punjab and upper Sindh during last week of the month.

Table-2: New Temperature Records Set in December 2024

S No	Stations	Weather Parameters	New Record		Old Record		No of years examined.
			Value	Date	Value	Date	
1	RISALPUR	Coldest night Temperature (°C)	-4.6	20/Dec/2024	-4.0	28/Dec/2018	71
2	D.I.KHAN(City)	Hottest night Temperature (°C)	13.5	03/Dec/2024	13.0	06/Dec/1994	64
3	JACOBABAD	Hottest night Temperature (°C)	17.0	02/Dec/2024	17.0	02/Dec/2011	64
4	MIANWALI AIRBAS	Hottest night Temperature (°C)	12.5	02/Dec/2024	12.5	10/Dec/2018	64
5	MOIN-JO-DARO	Hottest night Temperature (°C)	17.0	02/Dec/2024	17.0	02/Dec/2011	47
6	PANJGUR	Hottest night Temperature (°C)	14.5	01/Dec/2024	14.4	19/Dec/1962	64
7	SUKKUR	Hottest night Temperature (°C)	16.5	2&3/Dec/2024	16.5	2Days/Dec/2008	28

Rainfall: Excessively below Average across the country.

Climatologically, December is considered as an average rainy month with rainfall contribution to the national annual total and post-monsoon (OND) being only 4.5% and 50.3%, respectively. During the month, Pakistan experienced about three rain spells of light intensity. The daily area-averaged rainfall is shown in Fig-1. December 2024 rainfall with only 1.6 mm was **excessively below average** with an anomaly of **-88%** for Pakistan as a whole and ranked as 10th driest December during past 64 years (the driest one being in 1999 with zero mm). A similar situation has been observed on regional scale i.e. KP with

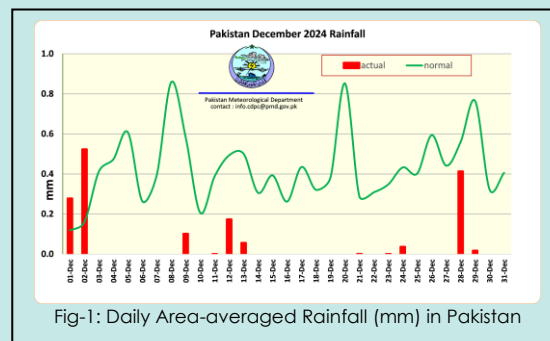


Fig-1: Daily Area-averaged Rainfall (mm) in Pakistan

0.7mm (-98%) recorded **excessively below-average** rainfall and ranked as 4th driest December (the driest one with 0.0mm been in three different years). Similarly, Sindh with only 0.1mm (-98%), Balochistan with 1.7mm (-87%), Punjab with 1.6mm (-894%), AJK with 6.9mm (-83%) and GB with 4.1mm (-62%) all experienced **excessively below-average** rainfall in the month (Table-3). The heaviest one-day rainfall of 25.0 mm occurred at Mirkhani (KP) on 3rd December. Whereas the station, Kalam (KP) has been the wettest place with monthly total 33.0 mm (Table-1).

Table-3: December 2024 Area Weighted Rainfall

Region	Rank (of 64y)	Normal (mm)	Average (mm)	Departure (percent)	Comment
Pakistan	10	13.3	1.6	-88	10 th driest (0.0mm recorded in 1999)
Azad Jammu & Kashmir	11	41.5	6.9	-83	----
Balochistan	18	12.8	1.7	-87	----
Gilgit Baltistan	28	10.6	4.1	-62	----
Khyber Pakhtunkhwa	04	30.0	0.7	-98	04 th driest (0.0mm recorded in 3 different years)
Punjab	21	10.2	1.6	-84	----
Sindh	23	3.4	0.1	-98	Driest 0.0 mm rainfall recorded in 22 different years

[RANK RANGES FROM 1 (LOWEST) TO 64 (HIGHEST) IN TERMS OF YEARS FROM 1961]

Barring the wettest station (Kalam), few other stations have recorded rainfall in double figures, i.e. Mirkhani 29.6 mm, Narowal 21.9 mm, Drosh 16.2 mm, Kasur 15.6 mm, Kotli 13.0 mm, Ormara 13.0 mm, Lahore Airport 12.0 mm, Astore 11.1 mm and Khuzdar 11.1 mm. Whereas the stations: Bahawalnagar, Faisalabad Airport, Chaklala Airbase, Mandibahauddin, Multan City, Sahiwal, Shorkot Airbase, Khanewal, Garhi Dupatta, Gilgit, Kakul, Peshawar Airbase, Peshawar City, Larkana and Quetta (Samungli) recorded only traces of rainfall during the month. On the hand a large number of stations remained absolutely dry in the month i.e. Bahawalpur City, Bahawalpur Airport, Chakwal, Islamabad Zeropoint, Jhang, Khanpur, Kot Addu, Kamra Airbase, Noorpur Thal, Rahim yar khan, Toba Tek Singh, Attock, Gupis, Muzaffarabad Airport, Muzaffarabad City, Hunza, Balakot, Bannu, Cherat, Lower Dir, Kohat Airbase, Malam Jabba, Parachinar, Bacha Khan Airport, Risalpur,

Saidu Sharif, Takht Bai, Badin, Chhor, Hyderabad Airport, Karachi Airport, Mithi, Shaheed Benazirabad, Padidan, Rohri, Sukkur, Mohen Jo Daro, Thatta, Dadu, Mirpur Khas, Tando Jam, Sakrand, Khairpur, Dalbandin, Gawadar, Jiwani, Kalat, Lasbela, Nokkundi, Panjgur, Pasni, Sibbi, Turbat, Zhob, Faisal Base and Masroor recorded no rain during the month.

December 2024 Rainfall maps

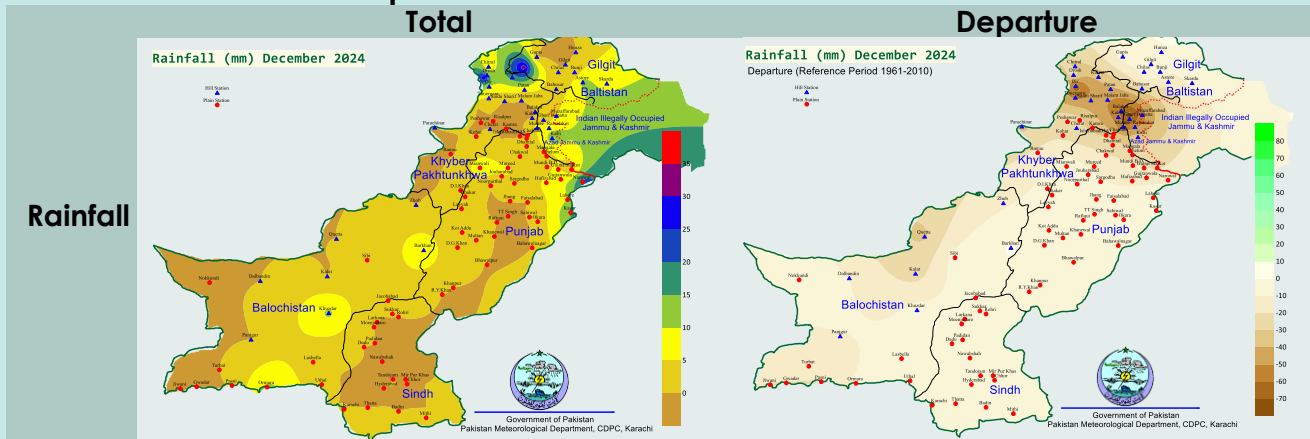


Fig. 2. December-2024 spatial rainfall distribution and departure from normal

Table 4: Cooler-than-average Temperatures across the country.

Area Averaged Temperatures (°C) in December 2024 and anomalies from normal 1961-1990						
Regions	Maximum Temperature		Minimum Temperature		Mean Temperature	
	Actual	Anomaly	Actual	Anomaly	Actual	Anomaly
Pakistan	20.03	-0.22	4.50	-0.35	12.27	-0.49
Azad Jammu & Kashmir	12.83	+0.11	-0.71	-1.19	6.09	-0.52
Balochistan	20.62	-0.06	4.14	-0.95	12.36	-0.79
Gilgit-Baltistan	8.75	+0.47	-5.20	-2.15	1.80	-0.83
Khyber Pakhtunkhwa	17.13	+0.72	1.87	-0.98	9.53	-0.11
Punjab	21.02	-0.90	6.33	+0.71	13.68	-0.41
Sindh	25.16	-1.02	9.55	+0.70	17.39	-0.08

The December 2024 national mean temperature of 12.27 °C was slightly cooler than the country-average of 12.77 °C with anomaly of -0.49 °C. A similar trend prevailed at regional scale too i.e. GB with 1.80 °C (-0.83 °C), Balochistan with 12.36 °C (-0.79 °C), AJK with 6.09 °C (-0.52 °C), Punjab with 13.68 °C (-0.41 °C), KP with 9.53 °C (-0.11 °C) and Sindh 17.39 °C (-0.08) all exhibited cooler than average temperatures (Table-4, Fig. 3 lower panel). The mean temperature anomalies ranged from -3.9 °C to +0.9 °C in the country with those being considerably higher over Sindh, western Balochistan and south Punjab.

The country-level monthly mean maximum (daytime) temperature of 20.25 °C was also slightly negatively anomalous (-0.22 °C) than the country average of 20.25 °C. On regional scale, Sindh with 25.16 °C (-1.02°C), Punjab with 21.02 °C (-0.90 °C) and Balochistan with 20.62 °C (-0.06 °C) observed the lower-than-average temperatures. In contrast, the KP with 17.13 (+0.72 °C), GB with 8.75 °C (+0.47°C) and AJK with 12.83°C (+0.11 °C) recorded the warmer-than-average temperatures (Table-4, Fig-3 upper panel). The mean maximum temperature anomalies ranged from -2.1 °C to +3.4 °C in the country with those being considerably higher over western Balochistan.

The country's monthly mean minimum (night-time) temperature (4.50 °C) has also been cooler, by -0.35 °C, than average (4.85 °C). A diverse trend was found across the regions: GB with -5.20 °C (-2.15 °C), AJ&K with -0.71°C (-1.19 °C), KP with 1.87 °C (-0.98 °C) and Balochistan with 4.14 °C (-0.95 °C),

all experienced cooler than average temperatures. While, Punjab with 6.33°C (+0.71 °C) and Sindh with 9.55 °C (+0.70 °C) exhibited warmer than average temperatures (Table-4, Fig-3, middle panel). The mean minimum temperature anomalies ranged from -6.1 to +2.5°C in the country with those being considerably higher over Sindh and South Punjab.

The hottest day of the month was 33.5 °C recorded at Gwadar (Balochistan) on 5th December. Whereas Lasbela (Balochistan) happened to be the warmest place with 28.4 °C average maximum temperature during the month. The lowest night (minimum) temperature of the month was -13.2 °C recorded at Skardu (GB) on 26th December, which coincidentally was the coolest place with -8.2 °C average night (minimum) temperature.

December 2024 Temperature maps

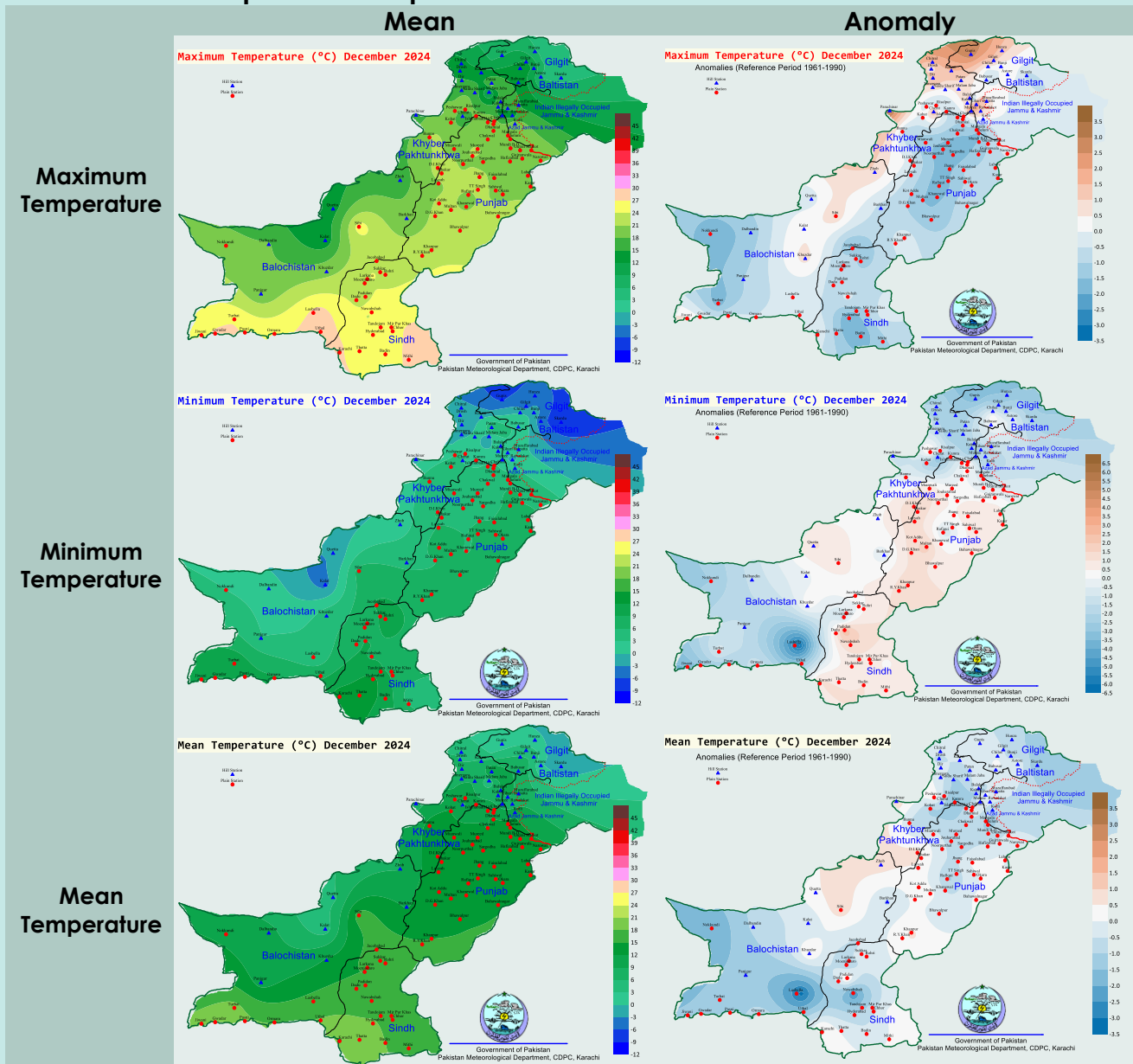


Fig. 3. December-2024 Temperatures (Maximum, Minimum & Mean) and their anomalies.

Table 5: December 2024 Monthly Averages & Normals

Station	Pressure (mb)		Temperature (°C)			Vapour Pressure	Precipitation	
	Station	Sea	Mean	Maximum	Minimum		Total	Days
Drosh	857.6	1536.6	5.7	11.9	-0.6	4.2	16.2	2.0
	858.8	1548.4	7.3	12.2	2.3	4.4	37.7	5.5
Peshawar	980.6	1019.8	11.8	21.0	2.6	8.1	0.0	0.0
	976.3	1018.7	12.9	20.7	5.1	8.9	16.9	3.5
Parachinar	830.5	1533.7	7.6	16.1	-0.9	4.9	0.0	0.0
	830.2	1530.6	6.4	13.4	-0.3	4.4	28.6	3.7
Rawalpindi	959.8	1019.4	11.6	19.1	4.0	6.8	0.0	0.0
	942.8	1019.0	12.0	20.0	4.0	8.3	31.2	4.5
Sargodha	995.7	1017.8	13.7	21.0	6.4	10.6	2.7	1.0
	996.0	1018.3	13.9	22.0	5.6	10.6	9.5	3.4
Jhelum	989.7	1017.5	12.4	19.9	4.8	9.6	2.0	1.0
	990.1	1017.9	13.9	21.5	6.3	10.3	26.6	4.0
Sialkot	987.5	1017.8	12.3	19.7	4.8	11.0	1.6	1.0
	987.8	1018.1	12.9	20.2	5.6	10.8	24.0	3.3
Zhob	859.5	1496.8	8.9	16.5	1.2	3.5	0.0	0.0
	861.3	1515.5	9.1	16.3	1.0	4.8	11.5	0.7
D.I.Khan	997.3	1017.8	14.3	21.8	6.8	10.4	1.0	1.0
	997.2	1017.9	14.0	22.2	5.7	10.1	8.8	2.3
Lahore	992.3	1017.8	14.3	20.9	7.8	10.1	8.0	1.0
	992.5	1017.9	14.8	21.9	7.8	10.6	9.9	3.1
Quetta	846.0	1550.6	5.5	13.0	-2.1	2.7	0.0	0.0
	844.3	1533.5	5.9	14.0	-1.9	5.0	37.5	4.3
Multan	1002.9	1017.5	14.3	21.2	7.3	10.6	1.0	1.0
	1003.6	1018.4	14.7	23.0	6.3	10.8	2.7	0.9
Barkhan	893.3	1510.8	11.8	18.3	5.3	3.6	9.0	2.0
	894.3	1521.6	12.6	20.9	6.0	5.5	6.0	0.6
Nokkundi	940.1	1018.9	11.2	19.2	3.0	3.3	0.0	0.0
	939.8	1018.1	13.4	21.4	5.5	6.1	1.8	0.3
Dalbandin	923.8	1535.5	10.0	18.2	1.7	4.4	0.0	0.0
	922.5	1527.1	11.6	18.7	1.8	5.8	12.5	0.9
Jacobabad	1010.8	1017.6	15.8	22.4	9.1	10.6	2.0	2.0
	1011.1	1017.7	16.6	24.3	8.9	10.3	2.9	0.2
Khanpur	1006.8	1017.4	15.0	23.3	6.7	11.4	0.0	0.0
	1006.9	1017.6	14.9	23.8	5.9	10.3	2.7	0.7
Panjgur	908.2	1528.4	10.8	18.5	3.1	5.9	0.0	0.0
	907.8	1527.4	12.5	19.8	5.2	3.9	8.9	1.0
Khuzdar	880.8	1529.0	12.4	19.9	4.9	6.1	11.1	2.0
	878.7	1510.4	12.1	19.8	4.7	2.9	14.3	1.2
Sh. Benazirabad	1014.3	1017.7	17.0	25.2	8.8	12.0	0.0	0.0
	1014.0	1018.0	16.9	26.0	7.8	11.8	1.8	0.2
Jiwani	1010.8	1017.4	19.0	26.5	11.4	10.8	0.0	0.0
	1010.6	1017.1	20.6	26.0	15.1	14.9	23.5	1.4
Pasni	1016.8	1017.4	18.8	27.1	10.4	9.3	0.0	0.0
	1015.6	1016.3	19.7	26.9	12.9	14.0	19.6	0.9
Hyderabad	1011.3	1016.3	18.6	24.2	13.0	9.7	0.0	0.0
	1013.0	1017.1	19.7	26.5	13.0	11.2	1.4	0.2
Chhor	1015.1	1015.8	17.4	27.6	7.0	10.3	0.0	0.0
	1015.7	1016.4	17.7	28.6	6.8	9.9	0.2	0.0
Karachi	1013.8	1016.5	20.0	27.4	12.6	7.5	0.0	0.0
	1014.3	1017.1	20.1	27.9	12.2	11.6	3.9	0.6

Note: The first row against each station contains the actual values while second row for normal values

Table 6: December 2024 extreme values

STATION	Mean Temperature (°C)				Temperature (°C)				Highest (mm & knots)			
	Highest	Date	Lowest	Date	Highest	Date	Lowest	Date	Rain	Date	Wind Speed	Date
Drosh	7.5	01	3.3	11	14.2	28	-3.0	12	9.2	03	8.0	07
Peshawar	16.4	03	8.4	28	26.0	04	-0.6	20*	0.0	00	4.0	09
Parachinar	10.8	01	5.5	24*	19.5	14	-4.0	25	0.0	00	6.0	1*
Rawalpindi	17.7	03	9.4	20*	23.4	02	1.0	19*	0.0	00	18.0	13
Sargodha	19.5	03	7.2	31	26.7	3*	4.3	19	2.0	09	4.0	1*
Jhelum	17.1	04	8.6	31	24.7	04	2.0	19	2.0	28	8.0	13
Sialkot	16.9	04	9.3	27*	24.2	01	1.8	16	1.6	28	4.0	07
Zhob	12.5	01*	6.3	26*	19.5	02	-2.5	26	0.0	00	8.0	11
D.I.Khan	19.8	03*	9.3	28	27.5	05	4.0	20*	1.0	09	4.0	4*
Lahore	20.0	01	10.6	30	27.0	01	4.2	20	7.2	28	4.0	13*
Quetta	10.5	01	2.3	12	17.5	29	-6.0	28	0.0	00	20.0	7*
Multan	19.4	01*	8.3	30	27.2	04	4.5	25	1.0	03	8.0	23
Barkhan	15.8	01	9.5	22*	21.5	16	2.0	22*	5.0	02	8.0	07
Nokkundi	17.8	01	5.3	17	24.5	01	-2.5	18*	0.0	00	20.0	8*
Dalbandin	16.5	01	3.8	17	24.0	15	-5.5	19	0.0	00	8.0	16*
Jacobabad	21.0	01	11.5	31	26.5	5*	5.0	31	1.0	2*	4.0	2*
Khanpur	21.5	04	10.2	31	30.0	07	2.7	21	0.0	00	8.0	23
Panjgur	18.0	01	5.0	17	23.5	04	-1.5	18*	0.0	00	20.0	08
Khuzdar	17.0	01	9.3	25	22.5	2*	2.0	17*	8.1	02	8.0	7*
Sh.Benazirabad	23.0	01	13.8	30	30.5	01	4.5	29*	0.0	00	14.0	09
Jiwani	24.3	01	15.8	19	30.5	06	6.5	20	0.0	00	16.0	8*
Pasni	23.5	05	14.5	21	32.0	5*	5.0	21	0.0	00	20.0	08
Hyderabad	23.8	02	16.0	30	30.5	05	8.5	28	0.0	00	20.0	25
Chhor	22.9	04	14.5	26	32.0	1*	3.5	15	0.0	00	6.0	12*
Karachi	25.5	04	17.3	21	31.7	1*	8.5	28	0.0	00	16.0	13

* means value occurred multiple times

Note

Monthly Climate Summary is produced by Pakistan Meteorological Department, Climate Data Processing Centre, Karachi to provide the main features of weather events occurred in the country during the month. The summary contains detailed data information of 25 climate stations of Pakistan. The extremes & analysis is based on 110 numbers of stations. The information in the summary is based on real time data and/or electronic reports, therefore, the above results can be considered only preliminary. Climate Summaries are usually published in the first week of each month. Long term average for rainfall is for 1961-2010 (50 years) while normal period for temperature is 1961-1990 (30 years).

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